

AD-A053 607

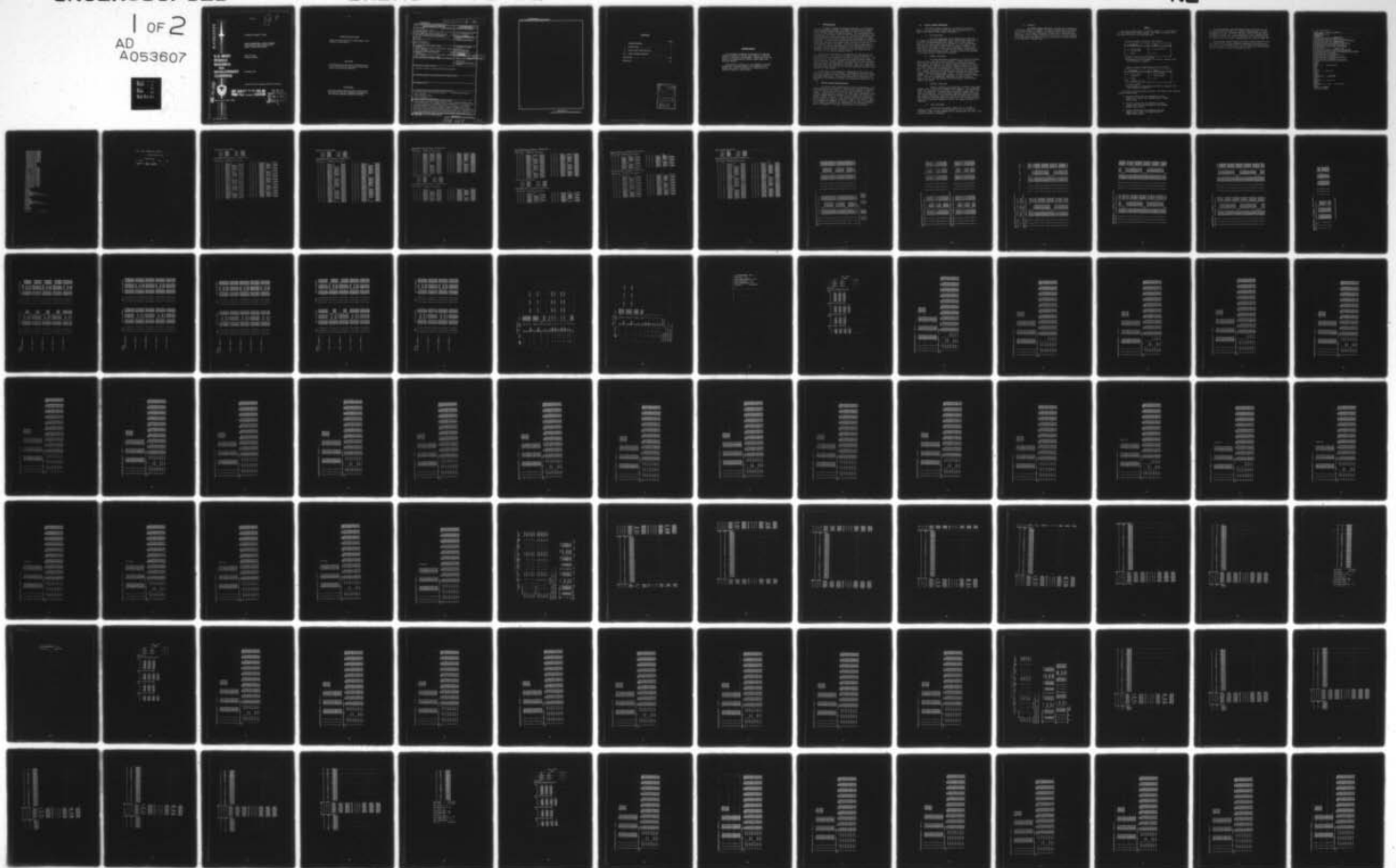
ARMY MISSILE RESEARCH AND DEVELOPMENT COMMAND REDSTO--ETC F/G 21/9.2
THREE-DIMENSIONAL FINITE ELEMENT ANALYSIS OF A SOLID PROPELLANT--ETC(U)
NOV 77 R M HACKETT

UNCLASSIFIED

DRDMI-T-78-18

NL

1 OF 2
AD
A053607



AD A 053607



**U.S. ARMY
MISSILE
RESEARCH
AND
DEVELOPMENT
COMMAND**

TECHNICAL REPORT T-78-18

THREE-DIMENSIONAL FINITE ELEMENT
ANALYSIS OF A SOLID PROPELLANT
GRAIN TRANSITION REGION

Robert M. Hackett
Propulsion Directorate

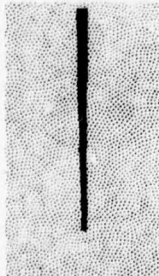
November 1977

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

**COPY AVAILABLE TO DDC DOES NOT
PERMIT FULLY LEGIBLE PRODUCTION**

Redstone Arsenal, Alabama 35809

UUC FILE COPY



12 9

DDC
RECEIVED
MAY 5 1978
A

DISPOSITION INSTRUCTIONS

**DESTROY THIS REPORT WHEN IT IS NO LONGER NEEDED. DO NOT
RETURN IT TO THE ORIGINATOR.**

DISCLAIMER

**THE FINDINGS IN THIS REPORT ARE NOT TO BE CONSTRUED AS AN
OFFICIAL DEPARTMENT OF THE ARMY POSITION UNLESS SO DESIGNATED BY OTHER AUTHORIZED DOCUMENTS.**

TRADE NAMES

**USE OF TRADE NAMES OR MANUFACTURERS IN THIS REPORT DOES
NOT CONSTITUTE AN OFFICIAL INDORSEMENT OR APPROVAL OF
THE USE OF SUCH COMMERCIAL HARDWARE OR SOFTWARE.**

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

(14) DRDMI-T-78-18

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Technical Report T-78-18	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) THREE-DIMENSIONAL FINITE ELEMENT ANALYSIS OF A SOLID PROPELLANT GRAIN TRANSITION REGION.	5. TYPE OF REPORT & PERIOD COVERED Technical Report	6. PERFORMING ORG. REPORT NUMBER T-78-18
7. AUTHOR(s) Robert M. Hackett	8. CONTRACT OR GRANT NUMBER(s)	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Commander US Army Missile Research and Development Command Attn: DRDMI-TK Redstone Arsenal, Alabama 35809	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS DA Project AMCMB 2437306970012	
11. CONTROLLING OFFICE NAME AND ADDRESS Commander US Army Missile Research and Development Command Attn: DRDMI-TI Redstone Arsenal, Alabama 35809	12. REPORT DATE Nov 1977	13. NUMBER OF PAGES (12) 142p.
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	15. SECURITY CLASS. (of this report) UNCLASSIFIED	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Three-Dimensional Finite Element Analysis Incompressible Material Solid Propellant Grain Transition Region Thermal Stresses Finite Element Mesh Generation		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) A three-dimensional finite element analysis of the transition region, from a star cross-section to a cylindrical bore cross-section, for a typical solid propellant rocket motor grain configuration is carried out. The recently developed TEXGAP-3D (Texas Grain Analysis Program, 3-Dimensional) static linear elastic stress analysis computer program is employed in the analysis. Two loading conditions, combustion pressure and thermal, are considered, along with corresponding transition interface displacements obtained from previous two-dimensional finite element analyses of the uniform grain regions.		

DD FORM 1 JAN 73 1473 EDITION OF 1 NOV 65 IS OBSOLETE

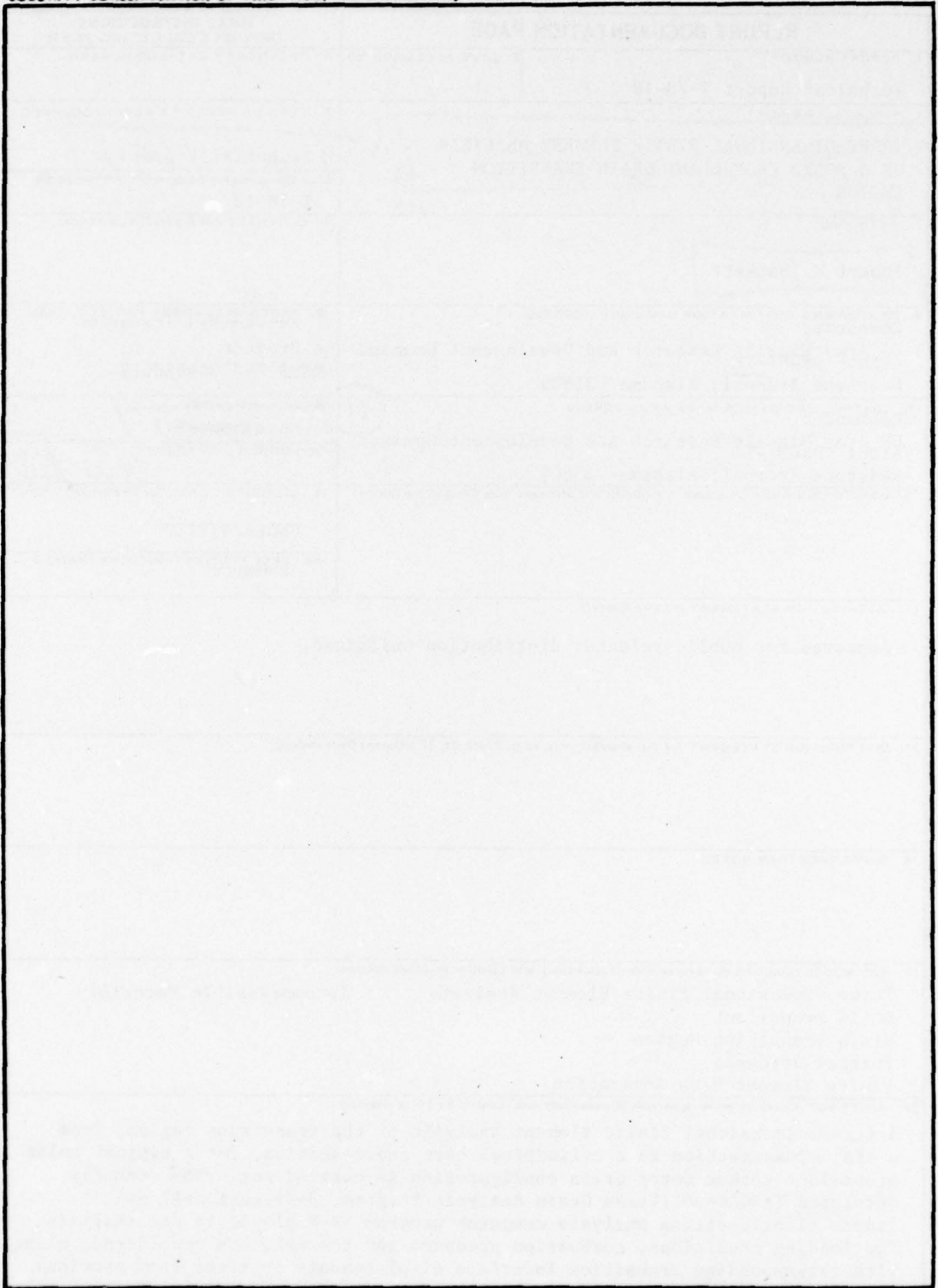
UNCLASSIFIED
SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

393 427

Haw

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

CONTENTS

	Page
ACKNOWLEDGEMENTS.	2
I. INTRODUCTION.	3
II. ROCKET GRAIN CONFIGURATION.	3
III. FINITE ELEMENT MODELING	4
CONCLUSIONS	138
REFERENCES.	139

ACCESSION FOR	
DTIC	Write Section <input checked="" type="checkbox"/>
DSS	Ref Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
BY	
DISTRIBUTION/AVAILABILITY CODES	
Dist.	AVAIL. and/or SPECIAL
A	23

ACKNOWLEDGMENT

The invaluable assistance of Don Martin in getting TEXGAP-3D operable on the CDC 6600 computer at Redstone Arsenal is gratefully acknowledged. Discussions with him relative to formulating the finite element model were also most helpful.

Appreciation is expressed to the MIRADCOM Propulsion Directorate - Redstone Arsenal, Army Research Office - Durham, and Battelle Laboratories - Durham Office for financial support of this project.

I. INTRODUCTION

In order to extend the analysis capability of the MIRADCOM Propulsion Mechanics Function, the TEXGAP-3D static linear elastic finite element computer code was obtained in July 1977 to be placed on the CDC 6600 computer at Redstone Arsenal. The development of the code evolved from a pilot effort in 1973, funded by Thiokol/Huntsville Division and more recently (the past two and a half years) has been sponsored by the US Air Force Rocket Propulsion Laboratory at Edwards, California. A short course on the TEXGAP-3D code, sponsored by Pacifica Technology, was held in Los Angeles the latter part of June 1977 at which time the code was released. Previous successful employment of the TEXGAP-2D computer code (developed by the same research group) by personnel of the Propulsion Mechanics Function primarily led to the decision to expend the effort necessary to get the TEXGAP-3D code operational on the Redstone computer system.

Once the code was adapted to the Redstone CDC 6600 computer and made operational, a task requiring a number of minor modifications to the obtained version of the code, a check-out procedure was begun. The check-out of the code involved running six classical check problems and two additional example problems and comparing the results obtained (computer output) with the results of computer runs (of the same problems) provided by the developers of TEXGAP-3D. Once these comparisons were made it was concluded that the code was operating correctly on the Redstone CDC 6600 computer.

At this point, the utilization of TEXGAP-3D for the purpose for which it was acquired was undertaken. The TEXGAP-3D analysis to which this report pertains is that of a transition region in a typical solid propellant rocket motor. The specific details of the analysis and a discussion of the results are given in the subsequent sections of this report.

II. ROCKET GRAIN CONFIGURATION

The rocket grain configuration is taken from Reference 1 and reproduced, in part, in Figure 1. Since only the transition region is to be considered, only that portion of the total geometry is shown in Figure 1. The transition is from a four-point star cross-section to a circular cylindrical bore cross-section. The region considered actually extends somewhat beyond (a distance of 0.463 inches) the transition region, as shown in Figure 1. Two slightly different star geometries are considered, as shown on Section A2 in Figure 1 and labeled I and II. Due to geometrical symmetry, as noted in Figure 1, and to the symmetry of the loading conditions to be considered, it was only necessary to model a 45° segment of the grain cross-section in the analysis.

III. FINITE ELEMENT MODELING

The finite element modeling of the transition region of Figure 1 will be discussed in detail and specific reference will be made to the TEXGAP-3D user's manual (Reference 2).

A. Grid Generation

The three-dimensional finite element grid system for the transition region was generated using a BLOCK command (Reference 2) to create a three-dimensional block region, such as that shown in Figure 2, the edges of which may be defined by a cubic interpolation. This permits a high degree of definition of curved boundaries. The eight corner points must be input, as per Reference 2, while points 9 through 32 (see Figure 2) not specified are located automatically by linear interpolation between corners. As many blocks as are necessary to accurately define a region may be generated.

B. Element Generation

The three-dimensional isoparametric 20 node brick element shown in Figure 3 was used in this analysis. As many bricks as are desired may be generated to fill the previously developed block(s). These elements are generated by a BRICK or BRICKH command (Reference 2). The BRICKH command employs a reformulated element (Reference 3) which takes into account near incompressibility (Poisson's ratio approaching 0.5). In this analysis the propellant grain elements were generated with a BRICKH command and the case elements were generated with a BRICK command. For both analysis models I and II, initially 16 propellant elements and 8 case elements were generated, as can be noted in Figures 4 and 5. The result of subsequent "rezoning" can also be noted in Figures 4 and 5, and this subject will be discussed a little further along in the report.

C. Boundary Conditions

Boundary conditions may be applied to element faces and/or element nodes. This is done through various commands, such as PRESSURE, SLOPE, etc. (Reference 2), along with a face number or node number (see Figure 3) designation. Various boundary condition commands were utilized in this analysis, and of particular importance were those displacement boundary conditions, taken from previous two-dimensional analyses (see Figure 6), which were applied at each end of the transition region. These will be mentioned relative to each of the separate analyses to be presented.

D. Post Processing

Various post processing commands may be utilized to compute stresses, strains and displacements at different points in an element. Some of these commands will be demonstrated when each of the separate analyses is presented.

E. Rezoning

The REZONE command (Reference 2) allows one to subdivide a coarse grid region of elements, for which a solution has been obtained, into a region of smaller elements, and thereby obtain a more accurate solution. A REPOS command (Reference 2) allows one to reposition nodal points when a better geometry definition is desired in a rezone analysis. The REZONE command was employed in this analysis and the rezoned regions can be observed in Figures 4 and 5.

MODEL I

The finite element model I is shown in Figure 4. It was analyzed for both pressure and thermal loading. The TEXGAP-3D computer input and output is shown on the following pages.

Pressure Loading - Firing at -53°C (-65°F)

Propellant	Case
$E_p = 1.31 \times 10^7 \text{ Pa}$ (19,000 psi) $\nu_p = 0.499$	$E_c = 2.07 \times 10^{10} \text{ Pa}$ $\nu_c = 0.3$

pressure = 1425 psi ($9.83 \times 10^5 \text{ Pa}$)

Corresponding end displacements are shown on computer input and referenced to Figure 6.

Thermal Loading (2 Weeks Storage at -53°C (-65°F))

Propellant	Case
$E_p = 4.82 \times 10^5 \text{ Pa}$ (700 psi) $\nu_p = 0.499$ $\alpha_p = 0.00089 \text{ in/in/}^{\circ}\text{F}$	$E_c = 2.07 \times 10^{10} \text{ Pa}$ ($3 \times 10^5 \text{ psi}$) $\nu_c = 0.3$

$T_o = 60^{\circ}\text{C}$ (140°F)

Corresponding end displacements are shown on computer input and referenced to Figure 6.

The results of three analyses on Model I are shown on the following computer output sheets:

- 1) pressure loading with two sequential rezoning computations, without any repositioning of element nodal points;
- 2) pressure loading with two sequential rezoning computations, with repositioning of some boundary element nodal points;
- 3) thermal loading with two sequential rezoning computations, without any repositioning of element nodal points.

The first analysis, with rezoning near the cylindrical bore end of the transition (see Figure 4), yielded a maximum strain of 0.0231 in element 113 (IJK). The second analysis, with rezoning and repositioning near the star end of the transition, yielded a maximum strain of 0.0594 in element 339. The third analysis, with rezoning near the cylindrical bore end, yielded a maximum strain of 0.200 in element 333.

The following results consist of the full computer output for the first analysis (for element orientation purposes, in the interest of the reader), and abbreviated output for the second and third analyses. The first analysis is contained on pages 8 thru 94, the second on pages 95 thru 102, and the third on pages 103 thru 108.

LINE DIRECT LIST OF INPUT DATA

```

1 SFINOCYL - STAR TO CYLINDRICAL BORE TRANSITION (I)
2 SETUP,4,PRESCRIB
3 ISO,PROPELLANT,1,1.9E4,.499
4 ISO,CASE,2,3.27,.3
5 END,MATERIALS
6 BLOCK-C,1, 1,1,1, 5,5,3, 7,.5 $ PROPELLANT NODES
7 .94,0,0, 2.447,0,0, 1.730,1.730,0, .665,.665,0/
8 .94,0,.463, 2.447,0,.463, 1.730,1.730,.463, .665,.665,.463/
9 10,2.430,.651,0, 12,.814,.470,0, 18,2.430,.651,.463, 20,.814,.470,.463/
10 22,2.180,1.258,0, 24,.908,.243,0, 30,2.180,1.258,.463, 32,.908,.243,.463/
11 BLOCK-C,1, 1,1,3, 5,5,7, 7,.5 $ PROPELLANT NODES
12 .94,0,.463, 2.447,0,.463, 1.730,1.730,.463, .665,.665,.463/
13 2.145,0,1.942, 2.447,0,1.942, 1.730,1.730,1.942, .665,.665,1.942/
14 10,2.430,.651,.463, 12,.814,.470,.463, 13,1.31,0,.973/
15 18,2.430,.651,1.942, 20,1.15,.33,1.942, 22,2.180,1.258,.463/
16 24,.907,.243,.463, 25,1.775,0,1.432, 30,2.180,1.258,1.942/
17 32,1.75,.33,1.942
18 BLOCK-C,1, 1,1,7, 5,5,9, 7,.5 $ PROPELLANT NODES
19 2.145,0,1.942, 2.447,0,1.942, 1.730,1.730,1.942, .665,.665,1.942/
20 2.145,0,2.405, 2.447,0,2.405, 1.730,1.730,2.405, .665,.665,2.405/
21 10,2.430,.651,1.942, 12,1.15,.33,1.942, 18,2.430,.651,2.405, 20,1.15,.33,2.405/
22 22,2.180,1.258,1.942, 24,1.75,.33,1.942, 30,2.180,1.258,2.405, 32,1.75,.33,2.405/
23 BLOCK,2, 5,1,1, 7,5,3 $ CASE NODES
24 2.447,0,0,2.517,0,0,2.517,45,0,2.447,45,0/
25 2.447,0,.463,2.517,0,.463,2.517,45,.463,2.447,45,.463/
26 BLOCK,2, 5,1,3, 7,5,7 $ CASE NODES
27 2.447,0,.463,2.517,0,.463,2.517,45,.463,2.447,45,.463/
28 2.447,0,1.942,2.517,0,1.942,2.517,45,1.942,2.447,45,1.942/
29 BLOCK,2, 5,1,7, 7,5,9 $ CASE NODES
30 2.447,0,1.942,2.517,0,1.942,2.517,45,1.942,2.447,45,1.942/
31 2.447,0,2.405,2.517,0,2.405,2.517,45,2.405,2.447,45,2.405/
32 END,GRID
33 KLOOP,4
34 ILOOP,2
35 JLOOP,2
36 SPICKM,1, 1,1,1 $ PROPELLANT ELEMENTS
37 JEND
38 IEND
39 KEND
40 KLOOP,4
41 JLOOP,2
42 SPICKM,2, 5,1,1 $ CASE ELEMENTS
43 JEND
44 KEND
45 KLOOP,4
46 ILOOP,3
47 BC,SLOPE,1,1,1, 5 $ 0 DEGREE FACE
48 BC,SLOPE,1,3,1, 2 $ 45 DEGREE FACE
49 IEND
50 KEND
51 JLOOP,2
52 BC,SLOPE,5,1,1, 6 $ END OF CASE
53 JEND
54 KLOOP,4
55 JLOOP,2
56 BC,PRESSURE, 1,1,1, 4,1.425E3 $ 1425 PSI PRESSURE
57 JEND
58 KEND
59 BC,UZ,1,1,1, 0,-2.184E-2
60 BC,UZ,1,2,1, 0,-2.184E-2
61 BC,UZ,1,3,1, 0,-2.184E-2

```

```

62 BC,UZ,1,1,1. 0.-1.84E-2
63 BC,UZ,1,1,1. 0.-2.184E-2
64 BC,UZ,2,1,1. 0.-1.630E-2
65 BC,UZ,2,1,1. 0.-1.630E-2
66 BC,UZ,2,1,1. 0.-1.630E-2
67 BC,UZ,3,1,1. 0.-1.092E-2
68 BC,UZ,3,2,1. 0.-1.092E-2
69 BC,UZ,3,3,1. 0.-1.092E-2
70 BC,UZ,3,4,1. 0.-1.092E-2
71 BC,UZ,3,5,1. 0.-1.092E-2
72 BC,UZ,4,1,1. 0.-0.546E-2
73 BC,UZ,4,1,1. 0.-0.546E-2
74 BC,UZ,4,5,1. 0.-0.546E-2
75 BC,UZ,5,1,1. 0.0.
76 BC,UZ,5,2,1. 0.0.
77 BC,UZ,5,3,1. 0.0.
78 BC,UZ,5,4,1. 0.0.
79 BC,UZ,5,5,1. 0.0.
80 BC,UZ,1,1,9. 0.-.215E-2
81 BC,UZ,1,2,9. 0.-.266E-2
82 BC,UZ,1,3,9. 0.-.347E-2
83 BC,UZ,1,4,9. 0.-.435E-2
84 BC,UZ,1,5,9. 0.-.466E-2
85 BC,UZ,2,1,9. 0.-.200E-2
86 BC,UZ,2,1,9. 0.-.246E-2
87 BC,UZ,2,5,9. 0.-.344E-2
88 BC,UZ,3,1,9. 0.-.184E-2
89 BC,UZ,3,2,9. 0.-.206E-2
90 BC,UZ,3,3,9. 0.-.257E-2
91 BC,UZ,3,4,9. 0.-.317E-2
92 BC,UZ,3,5,9. 0.-.341E-2
93 BC,UZ,4,1,9. 0.-.160E-2
94 BC,UZ,4,3,9. 0.-.199E-2
95 BC,UZ,4,5,9. 0.-.230E-2
96 BC,UZ,5,1,9. 0.-.153E-2
97 BC,UZ,5,2,9. 0.-.153E-2
98 BC,UZ,5,3,9. 0.-.153E-2
99 BC,UZ,5,4,9. 0.-.153E-2
100 BC,UZ,5,5,9. 0.-.153E-2
101 END,ELEMENTS
102 SOLVE
103 POST
104 BLOCK
105 OPTION,2
106 END,POST
107 REZONE,1,1,3, 3,3,5
108 REZONE,GRADS,1,1,3, 2,2,2
109 RCR,REZONE,1,1,3, 2,2,2,2,2,2, 1,1,3
110 END,CONTROL
111 SOLVE
112 POST
113 BLOCK
114 OPTION,2
115 END,POST
116 REZONE,1,1,3, 3,3,5
117 REZONE,GRADS,1,1,3, 2,2,2
118 RCR,REZONE,1,1,3, 2,2,2,2,2,2, 1,1,3
119 END,CONTROL
120 SOLVE
121 POST
122 BLOCK
123 OPTION,2
124 END,POST
125 STOP

```

TIME IN FFLDSH * .872 SECONDS

FINOCYL - STAR TO CYLINDRICAL BORE TRANSITION (II)

MATERIAL PROPERTIES BY TYPES

ISOTROPIC MATERIALS					
NO	MATERIAL	E	NU	ALPHA	RHO
1	PROPELLANT	.198E+09	.499E+00	0.	0.
2	CASE	.300E+00	.300E+00	0.	0.

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) =	.100E+01	G(2) =	.100E+01
G(3) =	.100E+01	G(4) =	.100E+01
G(5) =	.100E+01	G(6) =	.100E+01
G(7) =	.900E+00	G(8) =	.100E+01
G(9) =	.100E+01	G(10) =	.100E+01
G(11) =	.100E+01	G(12) =	.100E+01

MESH GENERATION BLOCK-C IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 1 TO I J K 5 5 3

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
1	1	1	.940E+00	0.	0.	1	1	2	.940E+00	0.	.231E+00
1	1	3	.940E+00	0.	.463E+00	1	2	1	.922E+00	.183E+00	0.
1	2	2	.922E+00	.143E+00	.231E+00	1	2	3	.922E+00	.183E+00	.463E+00
1	3	1	.868E+00	.359E+00	0.	1	3	2	.868E+00	.359E+00	.231E+00
1	3	3	.868E+00	.359E+00	.463E+00	1	4	1	.781E+00	.522E+00	0.
1	4	2	.781E+00	.522E+00	.231E+00	1	4	3	.781E+00	.522E+00	.463E+00
1	5	1	.665E+00	.665E+00	0.	2	5	2	.665E+00	.665E+00	.231E+00
1	5	3	.665E+00	.665E+00	.463E+00	2	1	1	.131E+01	0.	0.
2	1	2	.131E+01	0.	.231E+00	2	1	3	.131E+01	0.	.463E+00
2	2	1	.130E+01	.259E+00	0.	2	2	2	.129E+01	.256E+00	.231E+00
2	2	3	.127E+01	.253E+00	.463E+00	2	3	1	.123E+01	.511E+00	0.
2	3	2	.120E+01	.505E+00	.231E+00	2	3	3	.117E+01	.487E+00	.463E+00
2	4	1	.110E+01	.739E+00	0.	2	4	2	.107E+01	.717E+00	.231E+00
2	4	3	.103E+01	.658E+00	.463E+00	2	5	1	.931E+00	.931E+00	0.
2	5	2	.894E+00	.894E+00	.231E+00	2	5	3	.847E+00	.847E+00	.463E+00
3	1	1	.169E+01	0.	0.	3	1	2	.169E+01	0.	.231E+00
3	1	3	.169E+01	0.	.463E+00	3	2	1	.169E+01	.336E+00	0.
3	2	2	.167E+01	.332E+00	.231E+00	3	2	3	.164E+01	.327E+00	.463E+00
3	3	1	.160E+01	.662E+00	0.	3	3	2	.156E+01	.648E+00	.231E+00
3	3	3	.151E+01	.624E+00	.463E+00	3	4	1	.143E+01	.957E+00	0.
3	4	2	.138E+01	.926E+00	.231E+00	3	4	3	.132E+01	.883E+00	.463E+00
3	5	1	.119E+01	.119E+01	0.	3	5	2	.114E+01	.114E+01	.231E+00
3	5	3	.107E+01	.107E+01	.463E+00	4	1	1	.207E+01	0.	0.
4	1	2	.207E+01	0.	.231E+00	4	1	3	.207E+01	0.	.463E+00
4	2	1	.207E+01	.412E+00	0.	4	2	2	.205E+01	.409E+00	.231E+00
4	2	3	.203E+01	.405E+00	.463E+00	4	3	1	.196E+01	.814E+00	0.
4	3	2	.193E+01	.802E+00	.231E+00	4	3	3	.189E+01	.786E+00	.463E+00
4	4	1	.175E+01	.117E+01	0.	4	4	2	.172E+01	.115E+01	.231E+00
4	4	3	.166E+01	.111E+01	.463E+00	4	5	1	.146E+01	.146E+01	0.
4	5	2	.142E+01	.142E+01	.231E+00	4	5	3	.136E+01	.136E+01	.463E+00
5	1	1	.244E+01	0.	0.	5	1	2	.244E+01	0.	.231E+00
5	1	3	.244E+01	0.	.463E+00	5	2	1	.245E+01	.488E+00	0.
5	2	2	.245E+01	.488E+00	.231E+00	5	2	3	.245E+01	.488E+00	.463E+00
5	3	1	.233E+01	.965E+00	0.	5	3	2	.233E+01	.965E+00	.231E+00
5	3	3	.233E+01	.965E+00	.463E+00	5	4	1	.208E+01	.139E+01	0.
5	4	2	.208E+01	.139E+01	.231E+00	5	4	3	.208E+01	.139E+01	.463E+00
5	5	1	.173E+01	.173E+01	0.	5	5	2	.173E+01	.173E+01	.231E+00
5	5	3	.173E+01	.173E+01	.463E+00						

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) = .100E+01	G(2) = .100E+01
G(3) = .100E+01	G(4) = .100E+01
G(5) = .100E+01	G(6) = .100E+01
G(7) = .500E+00	G(8) = .100E+01
G(9) = .100E+01	G(10) = .100E+01
G(11) = .100E+01	G(12) = .100E+01

MESH GENERATION BLOCK-C IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 3 TO I J K 5 5 7

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
1	1	3	.9400E+00	0.	.4630E+00	1	1	4	.1201E+01	0.	.0543E+00
1	1	5	.1543E+01	0.	.1203E+01	1	1	6	.1004E+01	0.	.1551E+01
1	1	7	.2149E+01	0.	.1942E+01	1	2	3	.9210E+00	.1831E+00	.4630E+00
1	2	4	.1131E+01	.2134E+00	.8489E+00	1	2	5	.1401E+01	.2430E+00	.1203E+01
1	2	6	.1671E+01	.2741E+00	.1556E+01	1	2	7	.1000E+01	.8044E+00	.1942E+01
1	3	3	.8677E+00	.3595E+00	.4E30E+00	1	3	4	.9947E+00	.3520E+00	.8435E+00
1	3	5	.1162E+01	.3446E+00	.1203E+01	1	3	6	.1329E+01	.3371E+00	.1561E+01
1	3	7	.1456E+01	.3297E+00	.1942E+01	1	4	3	.7810E+00	.5224E+00	.4630E+00
1	4	4	.8277E+00	.4809E+00	.8381E+00	1	4	9	.8937E+00	.4394E+00	.1203E+01
1	4	6	.9596E+00	.3979E+00	.1567E+01	1	4	7	.1005E+01	.3564E+00	.1942E+01
1	5	3	.6650E+00	.6650E+00	.4630E+00	1	5	4	.6650E+00	.6650E+00	.8320E+00
1	5	5	.6650E+00	.6650E+00	.1203E+01	1	5	6	.6650E+00	.6650E+00	.1572E+01
1	5	7	.6650E+00	.6650E+00	.1942E+01	2	1	3	.1317E+01	0.	.4630E+00
2	1	4	.1513E+01	0.	.8489E+00	2	1	5	.1769E+01	0.	.1203E+01
2	1	6	.2829E+01	0.	.1556E+01	2	1	7	.2221E+01	0.	.1942E+01
2	2	3	.1305E+01	.2595E+00	.4630E+00	2	2	4	.1457E+01	.2412E+00	.8449E+00
2	2	5	.1656E+01	.3029E+00	.1203E+01	2	2	6	.1856E+01	.3240E+00	.1560E+01
2	2	7	.2013E+01	.3469E+00	.1942E+01	2	3	3	.1234E+01	.5110E+00	.4630E+00
2	3	4	.1310E+01	.9104E+00	.8409E+00	2	3	5	.1434E+01	.4891E+00	.1203E+01
2	3	6	.1552E+01	.4765E+00	.1564E+01	2	3	7	.1640E+01	.4636E+00	.1942E+01
2	4	3	.1108E+01	.7394E+00	.4630E+00	2	4	4	.1127E+01	.8979E+00	.8309E+00
2	4	5	.1160E+01	.6528E+00	.1203E+01	2	4	6	.1194E+01	.6852E+00	.1560E+01
2	4	7	.1211E+01	.5540E+00	.1942E+01	2	5	3	.9312E+00	.9312E+00	.4630E+00
2	5	4	.9137E+00	.9137E+00	.8327E+00	2	5	5	.8943E+00	.8943E+00	.1203E+01
2	5	6	.8723E+00	.8723E+00	.1572E+01	2	5	7	.8471E+00	.8471E+00	.1942E+01
3	1	3	.1694E+01	0.	.4630E+00	3	1	4	.1824E+01	0.	.8435E+00
3	1	5	.1995E+01	0.	.1203E+01	3	1	6	.2189E+01	0.	.1942E+01
3	1	7	.2296E+01	0.	.1942E+01	3	2	3	.1669E+01	.3360E+00	.4630E+00
3	2	4	.1787E+01	.3496E+00	.8409E+00	3	2	5	.1916E+01	.3634E+00	.1203E+01
3	2	6	.2049E+01	.3773E+00	.1564E+01	3	2	7	.2153E+01	.3914E+00	.1942E+01
3	3	3	.1600E+01	.6626E+00	.4630E+00	3	3	4	.1640E+01	.6520E+00	.8309E+00
3	3	5	.1719E+01	.6403E+00	.1203E+01	3	3	6	.1791E+01	.6270E+00	.1560E+01
3	3	7	.1844E+01	.6116E+00	.1942E+01	3	4	3	.1433E+01	.9573E+00	.4630E+00
3	4	4	.1435E+01	.9213E+00	.8355E+00	3	4	5	.1447E+01	.8816E+00	.1203E+01
3	4	6	.1457E+01	.8371E+00	.1569E+01	3	4	7	.1453E+01	.7861E+00	.1942E+01
3	5	3	.1190E+01	.1190E+01	.4630E+00	3	5	4	.1174E+01	.1174E+01	.8327E+00
3	5	5	.1147E+01	.1147E+01	.1203E+01	3	5	6	.1115E+01	.1115E+01	.1572E+01
3	5	7	.1077E+01	.1077E+01	.1942E+01	4	1	3	.2070E+01	0.	.4630E+00
4	1	4	.2138E+01	0.	.8381E+00	4	1	9	.2221E+01	0.	.1203E+01
4	1	6	.2386E+01	0.	.1567E+01	4	1	7	.2372E+01	0.	.1942E+01
4	2	3	.2873E+01	.4124E+00	.4630E+00	4	2	4	.2120E+01	.4100E+00	.8369E+00

MESH GENERATION BLOCK-C IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 3 TO I J K 5 5 7

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
4	2	5	.2183E+01	.4293E+00	.1203E+01	4	2	6	.2249E+01	.4310E+00	.1560E+01
4	2	7	.2300E+01	.4305E+00	.1942E+01	4	3	3	.1966E+01	.8141E+00	.4639E+00
4	3	4	.1986E+01	.8071E+00	.8355E+00	4	3	5	.2018E+01	.7989E+00	.1203E+01
4	3	6	.2050E+01	.7692E+00	.1569E+01	4	3	7	.2073E+01	.7774E+00	.1942E+01
4	4	3	.1759E+01	.1175E+01	.4630E+00	4	4	4	.1755E+01	.1153E+01	.8342E+00
4	4	6	.1794E+01	.1125E+01	.1203E+01	4	4	8	.1792E+01	.1090E+01	.1571E+01
4	4	7	.1741E+01	.1062E+01	.1942E+01	4	5	3	.1464E+01	.1464E+01	.4630E+00
4	5	4	.1446E+01	.1446E+01	.8327E+00	4	5	5	.1424E+01	.1424E+01	.1203E+01
4	5	6	.1398E+01	.1398E+01	.1572E+01	4	5	7	.1366E+01	.1366E+01	.1942E+01
5	1	3	.2447E+01	0.	.4630E+00	5	1	4	.2447E+01	0.	.8320E+00
5	1	6	.2447E+01	0.	.1203E+01	5	1	6	.2447E+01	0.	.1572E+01
5	1	7	.2447E+01	0.	.1942E+01	5	2	3	.2457E+01	.4880E+00	.4630E+00
5	2	4	.2457E+01	.4880E+00	.8327E+00	5	2	5	.2457E+01	.4880E+00	.1203E+01
5	2	6	.2457E+01	.4880E+00	.1572E+01	5	2	7	.2457E+01	.4880E+00	.1942E+01
5	3	3	.2332E+01	.9657E+00	.4630E+00	5	3	4	.2332E+01	.9657E+00	.8320E+00
5	3	5	.2332E+01	.9657E+00	.1203E+01	5	3	6	.2332E+01	.9657E+00	.1572E+01
5	3	7	.2332E+01	.9657E+00	.1342E+01	5	4	3	.2085E+01	.1392E+01	.4630E+00
5	4	4	.2085E+01	.1392E+01	.8320E+00	5	4	5	.2085E+01	.1392E+01	.1203E+01
5	4	6	.2085E+01	.1392E+01	.1572E+01	5	4	7	.2085E+01	.1392E+01	.1942E+01
5	5	3	.1730E+01	.1730E+01	.4630E+00	5	5	4	.1730E+01	.1730E+01	.8320E+00
5	5	5	.1730E+01	.1730E+01	.1203E+01	5	5	6	.1730E+01	.1730E+01	.1572E+01
5	5	7	.1730E+01	.1730E+01	.1942E+01						

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) =	.100E+01	G(2) =	.100E+01
G(3) =	.100E+01	G(4) =	.100E+01
G(5) =	.100E+01	G(6) =	.100E+01
G(7) =	.500E+00	G(8) =	.100E+01
G(9) =	.100E+01	G(10) =	.160E+01
G(11) =	.100E+01	G(12) =	.100E+01

MESH GENERATION BLOCK-C IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 7 TO I J K 5 5 9

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
1	1	7	.2145E+01	0.	.1342E+01	1	1	8	.2145E+01	0.	.2174E+01
1	1	9	.2145E+01	0.	.2405E+01	1	2	7	.1800E+01	.3044E+00	.1942E+01
1	2	8	.1800E+01	.3044E+00	.2174E+01	1	2	9	.1800E+01	.3044E+00	.2405E+01
1	3	7	.1456E+01	.3297E+00	.1942E+01	1	3	8	.1456E+01	.3297E+00	.2174E+01
1	3	9	.1456E+01	.3297E+00	.2405E+01	1	4	7	.1005E+01	.3564E+00	.1942E+01
1	4	8	.1005E+01	.3564E+00	.2174E+01	1	4	9	.1005E+01	.3564E+00	.2405E+01
1	5	7	.6650E+00	.6650E+00	.1942E+01	1	5	8	.6650E+00	.6650E+00	.2174E+01
1	5	9	.6650E+00	.6650E+00	.2405E+01	2	1	7	.2221E+01	0.	.1942E+01
2	1	4	.2221E+01	0.	.2174E+01	2	1	9	.2221E+01	0.	.2405E+01
2	2	7	.2025E+01	.3505E+00	.1942E+01	2	2	8	.2025E+01	.3489E+00	.2174E+01
2	2	9	.2013E+01	.3469E+00	.2405E+01	2	3	7	.1675E+01	.4887E+00	.1942E+01
2	3	8	.1661E+01	.4776E+00	.2174E+01	2	3	9	.1648E+01	.4636E+00	.2405E+01
2	4	7	.1275E+01	.6153E+00	.1942E+01	2	4	8	.1247E+01	.5883E+00	.2174E+01

MESH GENERATION BLOCK-C IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 7 TO I J K 5 5 9

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
1	1	7	.1211E+01	.5540E+00	.2405E+01	2	5	7	.9312E+00	.9312E+00	.1942E+01
2	4	9	.8943E+00	.8943E+00	.2174E+01	2	5	9	.8471E+00	.8471E+00	.2405E+01
3	1	7	.2296E+01	0.	.1942E+01	3	1	8	.2296E+01	0.	.2174E+01
3	1	9	.2296E+01	0.	.2405E+01	3	2	7	.2169E+01	.5966E+00	.1942E+01
3	2	8	.2162E+01	.3944E+00	.2174E+01	3	2	9	.2153E+01	.3914E+00	.2405E+01
3	3	7	.1894E+01	.6477E+00	.1942E+01	3	3	8	.1873E+01	.6329E+00	.2174E+01
3	3	9	.1844E+01	.6116E+00	.2405E+01	3	4	7	.1945E+01	.8743E+00	.1942E+01
3	4	8	.1587E+01	.8372E+00	.2174E+01	3	4	9	.1453E+01	.7861E+00	.2405E+01
3	5	7	.1198E+01	.1198E+01	.1942E+01	3	5	8	.1147E+01	.1147E+01	.2174E+01
3	5	9	.1877E+01	.1877E+01	.2405E+01	4	1	7	.2372E+01	0.	.1942E+01
4	1	8	.2372E+01	0.	.2174E+01	4	1	9	.2372E+01	0.	.2405E+01
4	2	7	.2313E+01	.4427E+00	.1942E+01	4	2	8	.2308E+01	.4410E+00	.2174E+01
4	2	9	.2308E+01	.4385E+00	.2405E+01	4	3	7	.2113E+01	.8867E+00	.1942E+01
4	3	8	.2897E+01	.7949E+00	.2174E+01	4	3	9	.2073E+01	.7774E+00	.2405E+01
4	4	7	.1815E+01	.1133E+01	.1942E+01	4	4	8	.1785E+01	.1184E+01	.2174E+01
4	4	9	.1741E+01	.1062E+01	.2405E+01	4	5	7	.1464E+01	.1464E+01	.1942E+01
4	5	8	.1424E+01	.1424E+01	.2174E+01	4	5	9	.1366E+01	.1366E+01	.2405E+01
5	1	7	.2447E+01	0.	.1942E+01	5	1	8	.2447E+01	0.	.2174E+01
5	1	9	.2447E+01	0.	.2405E+01	5	2	7	.2457E+01	.4888E+00	.1942E+01
5	2	8	.2457E+01	.4888E+00	.2174E+01	5	2	9	.2457E+01	.4888E+00	.2405E+01
5	3	7	.2332E+01	.9657E+00	.1942E+01	5	3	8	.2332E+01	.9657E+00	.2174E+01
5	3	9	.2332E+01	.9657E+00	.2405E+01	5	4	7	.2085E+01	.1392E+01	.1942E+01
5	4	8	.2085E+01	.1392E+01	.2174E+01	5	4	9	.2085E+01	.1392E+01	.2405E+01
5	5	7	.1730E+01	.1730E+01	.1942E+01	5	5	8	.1730E+01	.1730E+01	.2174E+01
5	5	9	.1730E+01	.1730E+01	.2405E+01						

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) =	.100E+01	G(2) =	.100E+01
G(3) =	.100E+01	G(4) =	.100E+01
G(5) =	.100E+01	G(6) =	.100E+01
G(7) =	.100E+01	G(8) =	.100E+01
G(9) =	.100E+01	G(10) =	.100E+01
G(11) =	.100E+01	G(12) =	.100E+01

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM 2
FROM I J K 5 1 1 TO I J K 7 5 3

GLOBAL CYLINDRICAL COORDINATES OF POINTS GENERATED

I	J	K	R	THETA	Z	I	J	K	R	THETA	Z
5	1	1	.2447E+01	0.	0.	5	1	2	.2447E+01	0.	.2319E+00
5	1	3	.2447E+01	0.	.4630E+00	5	2	1	.2447E+01	.1125E+02	0.
5	2	2	.2447E+01	.1125E+02	.2315E+00	5	2	3	.2447E+01	.1125E+02	.4630E+00
5	3	1	.2447E+01	.2250E+02	0.	5	3	2	.2447E+01	.2250E+02	.2315E+00
5	3	3	.2447E+01	.2250E+02	.4630E+00	5	4	1	.2447E+01	.3375E+02	0.
5	4	2	.2447E+01	.3375E+02	.2315E+00	5	4	3	.2447E+01	.3375E+02	.4630E+00
5	5	1	.2447E+01	.4500E+02	0.	5	5	2	.2447E+01	.4500E+02	.2319E+00
5	5	3	.2447E+01	.4500E+02	.4630E+00	6	1	1	.2402E+01	0.	0.
6	1	2	.2402E+01	0.	.2315E+00	6	1	3	.2402E+01	0.	.4630E+00
6	2	1	.2402E+01	.1125E+02	0.	6	2	2	.2402E+01	.1125E+02	.2315E+00

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM 2
FROM I J K 5 1 1 TO I J K 7 5 3

GLOBAL CYLINDRICAL COORDINATES OF POINTS GENERATED

I	J	K	R	THETA	Z	I	J	K	R	THETA	Z
6	2	3	.2402E+01	.1125E+02	.4630E+00	6	3	1	.2402E+01	.2250E+02	0.
6	3	2	.2402E+01	.2250E+02	.2315E+00	6	3	3	.2402E+01	.2250E+02	.4630E+00
6	4	1	.2402E+01	.3375E+02	0.	6	4	2	.2402E+01	.3375E+02	.2315E+00
6	4	3	.2402E+01	.3375E+02	.4630E+00	6	5	1	.2402E+01	.4500E+02	0.
6	5	2	.2402E+01	.4500E+02	.2315E+00	6	5	3	.2402E+01	.4500E+02	.4630E+00
7	1	1	.2517E+01	0.	0.	7	1	2	.2517E+01	0.	.2315E+00
7	1	3	.2517E+01	0.	.4630E+00	7	2	1	.2517E+01	.1125E+02	0.
7	2	2	.2517E+01	.1125E+02	.2315E+00	7	2	3	.2517E+01	.1125E+02	.4630E+00
7	3	1	.2517E+01	.2250E+02	0.	7	3	2	.2517E+01	.2250E+02	.2315E+00
7	3	3	.2517E+01	.2250E+02	.4630E+00	7	4	1	.2517E+01	.3375E+02	0.
7	4	2	.2517E+01	.3375E+02	.2315E+00	7	4	3	.2517E+01	.3375E+02	.4630E+00
7	5	1	.2517E+01	.4500E+02	0.	7	5	2	.2517E+01	.4500E+02	.2315E+00
7	5	3	.2517E+01	.4500E+02	.4630E+00						

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM 2
FROM I J K 5 1 1 TO I J K 7 5 3

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
5	1	1	.2447E+01	0.	0.	5	1	2	.2447E+01	0.	.2315E+00
5	1	3	.2447E+01	0.	.4630E+00	5	2	1	.2400E+01	.4774E+00	0.
5	2	2	.2400E+01	.4774E+00	.2315E+00	5	2	3	.2400E+01	.4774E+00	.4630E+00
5	3	1	.2261E+01	.9364E+00	0.	5	3	2	.2261E+01	.9364E+00	.2315E+00
5	3	3	.2261E+01	.9364E+00	.4630E+00	5	4	1	.2035E+01	.1359E+01	0.
5	4	2	.2035E+01	.1359E+01	.2315E+00	5	4	3	.2035E+01	.1359E+01	.4630E+00
5	5	1	.1730E+01	.1730E+01	0.	5	5	2	.1730E+01	.1730E+01	.2315E+00
5	5	3	.1730E+01	.1730E+01	.4630E+00	6	1	1	.2402E+01	0.	0.
6	1	2	.2402E+01	0.	.2315E+00	6	1	3	.2402E+01	0.	.4630E+00
6	2	1	.2434E+01	.4842E+00	0.	6	2	2	.2434E+01	.4842E+00	.2315E+00
6	2	3	.2434E+01	.4842E+00	.4630E+00	6	3	1	.2293E+01	.9498E+00	0.
6	3	2	.2293E+01	.9498E+00	.2315E+00	6	3	3	.2293E+01	.9498E+00	.4630E+00
6	4	1	.2064E+01	.1379E+01	0.	6	4	2	.2064E+01	.1379E+01	.2315E+00
6	4	3	.2064E+01	.1379E+01	.4630E+00	6	5	1	.1755E+01	.1755E+01	0.
6	5	2	.1755E+01	.1755E+01	.2315E+00	6	5	3	.1755E+01	.1755E+01	.4630E+00
7	1	1	.2517E+01	0.	0.	7	1	2	.2517E+01	0.	.2315E+00
7	1	3	.2517E+01	0.	.4630E+00	7	2	1	.2469E+01	.4910E+00	0.
7	2	2	.2469E+01	.4910E+00	.2315E+00	7	2	3	.2469E+01	.4910E+00	.4630E+00
7	3	1	.2325E+01	.9632E+00	0.	7	3	2	.2325E+01	.9632E+00	.2315E+00
7	3	3	.2325E+01	.9632E+00	.4630E+00	7	4	1	.2093E+01	.1398E+01	0.
7	4	2	.2093E+01	.1398E+01	.2315E+00	7	4	3	.2093E+01	.1398E+01	.4630E+00
7	5	1	.1700E+01	.1700E+01	0.	7	5	2	.1700E+01	.1700E+01	.2315E+00
7	5	3	.1700E+01	.1700E+01	.4630E+00						

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) = .100E+01	G(2) = .100E+01
G(3) = .100E+01	G(4) = .100E+01
G(5) = .100E+01	G(6) = .100E+01
G(7) = .100E+01	G(8) = .100E+01
G(9) = .100E+01	G(10) = .100E+01
G(11) = .100E+01	G(12) = .100E+01

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM Z
FROM I J K 5 1 3 TO I J K 7 5 7

GLOBAL CYLINDRICAL COORDINATES OF POINTS GENERATED

I	J	K	R	THETA	Z	I	J	K	R	THETA	Z
5	1	3	.2447E+01	0.	.4630E+00	5	1	4	.2447E+01	0.	.8328E+00
5	1	5	.2447E+01	0.	.1203E+01	5	1	6	.2447E+01	0.	.1572E+01
5	1	7	.2447E+01	0.	.1942E+01	5	2	3	.2447E+01	.1125E+02	.4630E+00
5	2	4	.2447E+01	.1125E+02	.8328E+00	5	2	5	.2447E+01	.1125E+02	.1203E+01
5	2	6	.2447E+01	.1125E+02	.1572E+01	5	2	7	.2447E+01	.1125E+02	.1942E+01
5	3	3	.2447E+01	.2250E+02	.4630E+00	5	3	4	.2447E+01	.2250E+02	.8328E+00
5	3	5	.2447E+01	.2250E+02	.1203E+01	5	3	6	.2447E+01	.2250E+02	.1572E+01
5	3	7	.2447E+01	.2250E+02	.1942E+01	5	4	3	.2447E+01	.3375E+02	.4630E+00
5	4	4	.2447E+01	.3375E+02	.8328E+00	5	4	9	.2447E+01	.3375E+02	.1203E+01
5	4	6	.2447E+01	.3375E+02	.1572E+01	5	4	7	.2447E+01	.3375E+02	.1942E+01
5	5	3	.2447E+01	.4500E+02	.4630E+00	5	5	4	.2447E+01	.4500E+02	.8328E+00
5	5	5	.2447E+01	.4500E+02	.1203E+01	5	5	6	.2447E+01	.4500E+02	.1572E+01
5	5	7	.2447E+01	.4500E+02	.1942E+01	6	1	3	.2402E+01	0.	.4630E+00
6	1	4	.2402E+01	0.	.8328E+00	6	1	5	.2402E+01	0.	.1203E+01
6	1	6	.2402E+01	0.	.1572E+01	6	1	7	.2402E+01	0.	.1942E+01
6	2	3	.2402E+01	.1125E+02	.4630E+00	6	2	4	.2402E+01	.1125E+02	.8328E+00
6	2	5	.2402E+01	.1125E+02	.1203E+01	6	2	6	.2402E+01	.1125E+02	.1572E+01
6	2	7	.2402E+01	.1125E+02	.1942E+01	6	3	3	.2402E+01	.2250E+02	.4630E+00
6	3	4	.2402E+01	.2250E+02	.8328E+00	6	3	5	.2402E+01	.2250E+02	.1203E+01
6	3	6	.2402E+01	.2250E+02	.1572E+01	6	3	7	.2402E+01	.2250E+02	.1942E+01
6	4	3	.2402E+01	.3375E+02	.4630E+00	6	4	4	.2402E+01	.3375E+02	.8328E+00
6	4	6	.2402E+01	.3375E+02	.1203E+01	6	4	6	.2402E+01	.3375E+02	.1572E+01
6	4	7	.2402E+01	.3375E+02	.1942E+01	6	5	3	.2402E+01	.4500E+02	.4630E+00
6	5	4	.2402E+01	.4500E+02	.8328E+00	6	5	5	.2402E+01	.4500E+02	.1203E+01
6	5	6	.2402E+01	.4500E+02	.1572E+01	6	5	7	.2402E+01	.4500E+02	.1942E+01
7	1	3	.2517E+01	0.	.4630E+00	7	1	4	.2517E+01	0.	.8328E+00
7	1	5	.2517E+01	0.	.1203E+01	7	1	6	.2517E+01	0.	.1572E+01
7	1	7	.2517E+01	0.	.1942E+01	7	2	3	.2517E+01	.1125E+02	.4630E+00
7	2	4	.2517E+01	.1125E+02	.8328E+00	7	2	5	.2517E+01	.1125E+02	.1203E+01
7	2	6	.2517E+01	.1125E+02	.1572E+01	7	2	7	.2517E+01	.1125E+02	.1942E+01
7	3	3	.2517E+01	.2250E+02	.4630E+00	7	3	4	.2517E+01	.2250E+02	.8328E+00
7	3	5	.2517E+01	.2250E+02	.1203E+01	7	3	6	.2517E+01	.2250E+02	.1572E+01
7	3	7	.2517E+01	.2250E+02	.1942E+01	7	4	3	.2517E+01	.3375E+02	.4630E+00
7	4	4	.2517E+01	.3375E+02	.8328E+00	7	4	5	.2517E+01	.3375E+02	.1203E+01
7	4	6	.2517E+01	.3375E+02	.1572E+01	7	4	7	.2517E+01	.3375E+02	.1942E+01
7	5	3	.2517E+01	.4500E+02	.4630E+00	7	5	4	.2517E+01	.4500E+02	.8328E+00
7	5	5	.2517E+01	.4500E+02	.1203E+01	7	5	6	.2517E+01	.4500E+02	.1572E+01
7	5	7	.2517E+01	.4500E+02	.1942E+01						

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM 2
FROM I J K 5 1 3 TO I J K 7 5 7

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
5	1	3	.2447E+01	0.	.4630E+00	5	1	4	.2447E+01	0.	.4630E+00
5	1	5	.2447E+01	0.	.1203E+01	5	1	6	.2447E+01	0.	.1572E+01
5	1	7	.2447E+01	0.	.1942E+01	5	2	3	.2447E+01	.4774E+00	.6630E+00
5	2	4	.2447E+01	.4774E+00	.6630E+00	5	2	5	.2447E+01	.6774E+00	.1203E+01
5	2	6	.2447E+01	.6774E+00	.1203E+01	5	2	7	.2447E+01	.1942E+01	.1572E+01
5	3	3	.2261E+01	.9364E+00	.4630E+00	5	3	4	.2261E+01	.9364E+00	.6630E+00
5	3	5	.2261E+01	.9364E+00	.6630E+00	5	3	6	.2261E+01	.1359E+01	.1203E+01
5	3	7	.2261E+01	.1359E+01	.1572E+01	5	3	8	.2261E+01	.1730E+01	.1942E+01
5	4	4	.2035E+01	.1359E+01	.6630E+00	5	4	5	.2035E+01	.1359E+01	.1203E+01
5	4	6	.2035E+01	.1359E+01	.1203E+01	5	4	7	.2035E+01	.1730E+01	.1572E+01
5	5	3	.1730E+01	.1730E+01	.4630E+00	5	5	4	.1730E+01	.1730E+01	.6630E+00
5	5	5	.1730E+01	.1730E+01	.6630E+00	5	5	6	.1730E+01	.1730E+01	.1203E+01
5	5	7	.1730E+01	.1730E+01	.1572E+01	5	5	8	.1730E+01	.1730E+01	.1942E+01
6	1	4	.2447E+01	0.	.4630E+00	6	1	5	.2447E+01	0.	.6630E+00
6	1	6	.2447E+01	0.	.1203E+01	6	1	7	.2447E+01	0.	.1572E+01
6	2	3	.2447E+01	.4774E+00	.6630E+00	6	2	4	.2447E+01	.4774E+00	.1203E+01
6	2	5	.2447E+01	.6774E+00	.1203E+01	6	2	6	.2447E+01	.1942E+01	.1572E+01
6	3	3	.2261E+01	.9364E+00	.4630E+00	6	3	4	.2261E+01	.9364E+00	.6630E+00
6	3	5	.2261E+01	.9364E+00	.6630E+00	6	3	6	.2261E+01	.1359E+01	.1203E+01
6	3	7	.2261E+01	.1359E+01	.1572E+01	6	3	8	.2261E+01	.1730E+01	.1942E+01
6	4	4	.2035E+01	.1359E+01	.6630E+00	6	4	5	.2035E+01	.1359E+01	.1203E+01
6	4	6	.2035E+01	.1359E+01	.1203E+01	6	4	7	.2035E+01	.1730E+01	.1572E+01
6	5	3	.1730E+01	.1730E+01	.4630E+00	6	5	4	.1730E+01	.1730E+01	.6630E+00
6	5	5	.1730E+01	.1730E+01	.6630E+00	6	5	6	.1730E+01	.1730E+01	.1203E+01
6	5	7	.1730E+01	.1730E+01	.1572E+01	6	5	8	.1730E+01	.1730E+01	.1942E+01
7	1	3	.2447E+01	0.	.4630E+00	7	1	4	.2447E+01	0.	.6630E+00
7	1	5	.2447E+01	0.	.1203E+01	7	1	6	.2447E+01	0.	.1572E+01
7	1	7	.2447E+01	0.	.1942E+01	7	2	3	.2447E+01	.4774E+00	.6630E+00
7	2	4	.2447E+01	.4774E+00	.1203E+01	7	2	5	.2447E+01	.6774E+00	.1203E+01
7	2	6	.2447E+01	.6774E+00	.1572E+01	7	2	7	.2447E+01	.1942E+01	.1572E+01
7	3	3	.2261E+01	.9364E+00	.4630E+00	7	3	4	.2261E+01	.9364E+00	.6630E+00
7	3	5	.2261E+01	.9364E+00	.6630E+00	7	3	6	.2261E+01	.1359E+01	.1203E+01
7	3	7	.2261E+01	.1359E+01	.1572E+01	7	3	8	.2261E+01	.1730E+01	.1942E+01
7	4	4	.2035E+01	.1359E+01	.6630E+00	7	4	5	.2035E+01	.1359E+01	.1203E+01
7	4	6	.2035E+01	.1359E+01	.1203E+01	7	4	7	.2035E+01	.1730E+01	.1572E+01
7	5	3	.1730E+01	.1730E+01	.4630E+00	7	5	4	.1730E+01	.1730E+01	.6630E+00
7	5	5	.1730E+01	.1730E+01	.6630E+00	7	5	6	.1730E+01	.1730E+01	.1203E+01
7	5	7	.1730E+01	.1730E+01	.1572E+01	7	5	8	.1730E+01	.1730E+01	.1942E+01

GRADIENTS FOR NEXT BLOCK GENERATION

G(1) =	.100E+01	G(2) =	.100E+01
G(3) =	.100E+01	G(4) =	.100E+01
G(5) =	.100E+01	G(6) =	.100E+01
G(7) =	.100E+01	G(8) =	.100E+01
G(9) =	.100E+01	G(10) =	.100E+01
G(11) =	.100E+01	G(12) =	.100E+01

GLOBAL CYLINDRICAL COORDINATES OF POINTS GENERATED

R	K	J	I	THETA	Z
247E01	0	1	5	194E+01	247E01
247E01	1	2	5	205E+01	27E+01
247E01	2	3	5	217E+01	27E+01
247E01	3	4	5	229E+02	27E+01
247E01	4	5	5	241E+02	27E+01
247E01	5	6	5	253E+02	27E+01
247E01	6	7	5	265E+02	27E+01
247E01	7	8	5	277E+02	27E+01
247E01	8	9	5	289E+02	27E+01
247E01	9	0	5	301E+02	27E+01
247E01	0	1	6	313E+02	27E+01
247E01	1	2	6	325E+02	27E+01
247E01	2	3	6	337E+02	27E+01
247E01	3	4	6	349E+02	27E+01
247E01	4	5	6	361E+02	27E+01
247E01	5	6	6	373E+02	27E+01
247E01	6	7	6	385E+02	27E+01
247E01	7	8	6	397E+02	27E+01
247E01	8	9	6	409E+02	27E+01
247E01	9	0	6	421E+02	27E+01
247E01	0	1	7	433E+02	27E+01
247E01	1	2	7	445E+02	27E+01
247E01	2	3	7	457E+02	27E+01
247E01	3	4	7	469E+02	27E+01
247E01	4	5	7	481E+02	27E+01
247E01	5	6	7	493E+02	27E+01
247E01	6	7	7	505E+02	27E+01
247E01	7	8	7	517E+02	27E+01
247E01	8	9	7	529E+02	27E+01
247E01	9	0	7	541E+02	27E+01
247E01	0	1	8	553E+02	27E+01
247E01	1	2	8	565E+02	27E+01
247E01	2	3	8	577E+02	27E+01
247E01	3	4	8	589E+02	27E+01
247E01	4	5	8	601E+02	27E+01
247E01	5	6	8	613E+02	27E+01
247E01	6	7	8	625E+02	27E+01
247E01	7	8	8	637E+02	27E+01
247E01	8	9	8	649E+02	27E+01
247E01	9	0	8	661E+02	27E+01
247E01	0	1	9	673E+02	27E+01
247E01	1	2	9	685E+02	27E+01
247E01	2	3	9	697E+02	27E+01
247E01	3	4	9	709E+02	27E+01
247E01	4	5	9	721E+02	27E+01
247E01	5	6	9	733E+02	27E+01
247E01	6	7	9	745E+02	27E+01
247E01	7	8	9	757E+02	27E+01
247E01	8	9	9	769E+02	27E+01
247E01	9	0	9	781E+02	27E+01
247E01	0	1	0	793E+02	27E+01

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

[illegible]

MESH GENERATION BLOCK IN CYLINDRICAL COORDINATE SYSTEM 2
FROM I J K 5 1 7 TO I J K 7 5 9

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
7	5	7	.1780E+01	.1780E+01	.1942E+01	7	5	8	.1780E+01	.1780E+01	.2174E+01
7	5	9	.1780E+01	.1780E+01	.2485E+01						

MESH GENERATION END IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K 1 1 1 TO I J K 13 13 21

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

I	J	K	X	Y	Z	I	J	K	X	Y	Z
1	1	1	.9400E+00	0.	0.	1	1	1	.9400E+00	0.	.2515E+00
1	1	3	.9400E+00	0.	.4630E+00	1	1	4	.9400E+00	0.	.8545E+00
1	1	5	.9400E+00	0.	.1203E+01	1	1	6	.9400E+00	0.	.1551E+01
1	1	7	.9400E+00	0.	.1942E+01	1	1	8	.9400E+00	0.	.2174E+01
1	1	9	.9400E+00	0.	.2485E+01	1	1	10	.9400E+00	0.	.3044E+01
1	2	2	.9224E+00	.1331E+00	.2315E+00	1	2	3	.9217E+00	.1831E+00	.4630E+00
1	2	4	.9224E+00	.2134E+00	.4630E+00	1	2	5	.9217E+00	.2835E+00	.8545E+00
1	2	6	.9224E+00	.2741E+00	.1551E+01	1	2	7	.9217E+00	.3844E+00	.1551E+01
1	2	8	.9224E+00	.3044E+00	.2174E+01	1	2	9	.9217E+00	.4853E+00	.2174E+01
1	3	1	.8683E+00	.3595E+00	0.	1	3	2	.8683E+00	.5862E+00	.2515E+00
1	3	3	.8683E+00	.3595E+00	.4630E+00	1	3	4	.8683E+00	.6871E+00	.8545E+00
1	3	5	.8683E+00	.3595E+00	.1203E+01	1	3	6	.8683E+00	.7880E+00	.1551E+01
1	3	7	.8683E+00	.3595E+00	.1942E+01	1	3	8	.8683E+00	.8889E+00	.2174E+01
1	3	9	.8683E+00	.3595E+00	.2485E+01	1	3	10	.8683E+00	.9898E+00	.3044E+01
1	4	2	.7816E+00	.5224E+00	.2315E+00	1	4	3	.7816E+00	.5224E+00	.4630E+00
1	4	4	.8277E+00	.4889E+00	.8381E+00	1	4	5	.8277E+00	.4889E+00	.1203E+01
1	4	6	.9596E+00	.3979E+00	.1567E+01	1	4	7	.9596E+00	.3979E+00	.1942E+01
1	4	8	.1005E+01	.3564E+00	.2174E+01	1	4	9	.1005E+01	.3564E+00	.2485E+01
1	5	1	.6650E+00	.6650E+00	0.	1	5	2	.6650E+00	.6650E+00	.2515E+00
1	5	3	.6650E+00	.6650E+00	.4630E+00	1	5	4	.6650E+00	.6650E+00	.8545E+00
1	5	5	.6650E+00	.6650E+00	.1203E+01	1	5	6	.6650E+00	.6650E+00	.1551E+01
1	5	7	.6650E+00	.6650E+00	.1942E+01	1	5	8	.6650E+00	.6650E+00	.2174E+01
1	5	9	.6650E+00	.6650E+00	.2485E+01	1	5	10	.6650E+00	.6650E+00	.3044E+01
2	1	2	.1317E+01	0.	.2315E+00	2	1	3	.1317E+01	0.	.4630E+00
2	1	4	.1317E+01	0.	.4630E+00	2	1	5	.1317E+01	0.	.8545E+00
2	1	6	.1317E+01	0.	.1551E+01	2	1	7	.1317E+01	0.	.2174E+01
2	1	8	.2221E+01	0.	.2174E+01	2	1	9	.2221E+01	0.	.3044E+01
2	2	1	.1305E+01	.2595E+00	0.	2	2	2	.1305E+01	.2595E+00	.4630E+00
2	2	3	.1305E+01	.2595E+00	.4630E+00	2	2	4	.1305E+01	.2595E+00	.8545E+00
2	2	5	.1305E+01	.2595E+00	.1203E+01	2	2	6	.1305E+01	.2595E+00	.1551E+01
2	2	7	.1305E+01	.2595E+00	.1942E+01	2	2	8	.1305E+01	.2595E+00	.2174E+01
2	2	9	.1305E+01	.2595E+00	.2485E+01	2	2	10	.1305E+01	.2595E+00	.3044E+01
2	3	2	.1695E+01	.5385E+00	.2315E+00	2	3	3	.1695E+01	.5385E+00	.4630E+00
2	3	4	.1695E+01	.5385E+00	.4630E+00	2	3	5	.1695E+01	.5385E+00	.8545E+00
2	3	6	.1695E+01	.5385E+00	.1203E+01	2	3	7	.1695E+01	.5385E+00	.1551E+01
2	3	8	.1695E+01	.5385E+00	.1942E+01	2	3	9	.1695E+01	.5385E+00	.2174E+01
2	3	10	.1695E+01	.5385E+00	.2485E+01	2	3	11	.1695E+01	.5385E+00	.3044E+01
2	4	1	.1107E+01	.7398E+00	0.	2	4	2	.1107E+01	.7398E+00	.4630E+00
2	4	3	.1107E+01	.7398E+00	.4630E+00	2	4	4	.1107E+01	.7398E+00	.8545E+00
2	4	5	.1107E+01	.7398E+00	.1203E+01	2	4	6	.1107E+01	.7398E+00	.1551E+01
2	4	7	.1275E+01	.6153E+00	.1942E+01	2	4	8	.1275E+01	.6153E+00	.2174E+01
2	4	9	.1275E+01	.6153E+00	.2485E+01	2	4	10	.1275E+01	.6153E+00	.3044E+01
2	5	2	.8943E+00	.8943E+00	.2315E+00	2	5	3	.8943E+00	.8943E+00	.4630E+00

MESH GENERATION END IN CARTESIAN COORDINATE SYSTEM 1
FROM I J K I I I TO I J K I I I

GLOBAL CARTESIAN COORDINATES OF POINTS GENERATED

1	2	5	4	9137E+00	9137E+00	8327E+00	2	5	5	8	8327E+00	2	5	5	8	8327E+00	8327E+00	2	5	5	8	8327E+00	8327E+00	
2	5	6	8	8923E+00	8923E+00	1572E+01	2	5	6	8	8923E+00	2	5	6	8	8923E+00	1572E+01	2	5	6	8	8923E+00	1572E+01	
3	1	1	1	1694E+01	0	2174E+01	3	1	1	1	1694E+01	3	1	1	1	1694E+01	0	2174E+01	3	1	1	1	1694E+01	
3	1	3	1	1694E+01	0	4630E+00	3	1	3	1	1694E+01	3	1	3	1	1694E+01	0	4630E+00	3	1	3	1	1694E+01	
3	1	9	9	1995E+01	0	1203E+01	3	1	9	9	1995E+01	3	1	9	9	1995E+01	0	1203E+01	3	1	9	9	1995E+01	
3	1	7	7	2296E+01	0	1942E+01	3	1	7	7	2296E+01	3	1	7	7	2296E+01	0	1942E+01	3	1	7	7	2296E+01	
3	1	9	9	2296E+01	0	405E+01	3	1	9	9	2296E+01	3	1	9	9	2296E+01	0	405E+01	3	1	9	9	2296E+01	
3	2	2	2	1671E+01	3323E+00	2315E+00	3	2	2	2	1671E+01	3	2	2	2	1671E+01	3323E+00	2315E+00	3	2	2	2	1671E+01	3323E+00
3	2	4	4	1707E+01	3496E+00	8409E+00	3	2	4	4	1707E+01	3	2	4	4	1707E+01	3496E+00	8409E+00	3	2	4	4	1707E+01	3496E+00
3	2	4	4	2049E+01	3773E+00	1564E+01	3	2	4	4	2049E+01	3	2	4	4	2049E+01	3773E+00	1564E+01	3	2	4	4	2049E+01	3773E+00
3	2	5	5	2162E+01	3946E+00	2174E+01	3	2	5	5	2162E+01	3	2	5	5	2162E+01	3946E+00	2174E+01	3	2	5	5	2162E+01	3946E+00
3	3	1	1	1600E+01	6626E+00	0	3	3	1	1	1600E+01	3	3	1	1	1600E+01	6626E+00	0	3	3	1	1	1600E+01	
3	3	3	3	1600E+01	6626E+00	6626E+00	3	3	3	3	1600E+01	3	3	3	3	1600E+01	6626E+00	6626E+00	3	3	3	3	1600E+01	6626E+00
3	3	5	5	1719E+01	6403E+00	1203E+01	3	3	5	5	1719E+01	3	3	5	5	1719E+01	6403E+00	1203E+01	3	3	5	5	1719E+01	6403E+00
3	3	7	7	1894E+01	6477E+00	1942E+01	3	3	7	7	1894E+01	3	3	7	7	1894E+01	6477E+00	1942E+01	3	3	7	7	1894E+01	6477E+00
3	3	9	9	1844E+01	6116E+00	2495E+01	3	3	9	9	1844E+01	3	3	9	9	1844E+01	6116E+00	2495E+01	3	3	9	9	1844E+01	6116E+00
3	4	2	2	1307E+01	9201E+00	2315E+00	3	4	2	2	1307E+01	3	4	2	2	1307E+01	9201E+00	2315E+00	3	4	2	2	1307E+01	9201E+00
3	4	4	4	1435E+01	9213E+00	8395E+00	3	4	4	4	1435E+01	3	4	4	4	1435E+01	9213E+00	8395E+00	3	4	4	4	1435E+01	9213E+00
3	4	6	6	1497E+01	8371E+00	1595E+01	3	4	6	6	1497E+01	3	4	6	6	1497E+01	8371E+00	1595E+01	3	4	6	6	1497E+01	8371E+00
3	4	8	8	1507E+01	8372E+00	2174E+01	3	4	8	8	1507E+01	3	4	8	8	1507E+01	8372E+00	2174E+01	3	4	8	8	1507E+01	8372E+00
3	5	1	1	1190E+01	1190E+01	0	3	5	1	1	1190E+01	3	5	1	1	1190E+01	1190E+01	0	3	5	1	1	1190E+01	
3	5	3	3	1190E+01	1190E+01	0	3	5	3	3	1190E+01	3	5	3	3	1190E+01	1190E+01	0	3	5	3	3	1190E+01	
3	5	5	5	1190E+01	1190E+01	0	3	5	5	5	1190E+01	3	5	5	5	1190E+01	1190E+01	0	3	5	5	5	1190E+01	
3	5	7	7	1190E+01	1190E+01	0	3	5	7	7	1190E+01	3	5	7	7	1190E+01	1190E+01	0	3	5	7	7	1190E+01	
3	5	9	9	1190E+01	1190E+01	0	3	5	9	9	1190E+01	3	5	9	9	1190E+01	1190E+01	0	3	5	9	9	1190E+01	
4	1	2	2	2070E+01	1077E+01	0	4	1	2	2	2070E+01	4	1	2	2	2070E+01	1077E+01	0	4	1	2	2	2070E+01	
4	1	4	4	2366E+01	0	2315E+00	4	1	4	4	2366E+01	4	1	4	4	2366E+01	0	2315E+00	4	1	4	4	2366E+01	
4	1	6	6	2366E+01	0	1572E+01	4	1	6	6	2366E+01	4	1	6	6	2366E+01	0	1572E+01	4	1	6	6	2366E+01	
4	1	8	8	2372E+01	0	2174E+01	4	1	8	8	2372E+01	4	1	8	8	2372E+01	0	2174E+01	4	1	8	8	2372E+01	
4	2	1	1	2074E+01	4124E+00	0	4	2	1	1	2074E+01	4	2	1	1	2074E+01	4124E+00	0	4	2	1	1	2074E+01	
4	2	3	3	2073E+01	4124E+00	6302E+00	4	2	3	3	2073E+01	4	2	3	3	2073E+01	4124E+00	6302E+00	4	2	3	3	2073E+01	
4	2	5	5	2103E+01	4233E+00	1203E+01	4	2	5	5	2103E+01	4	2	5	5	2103E+01	4233E+00	1203E+01	4	2	5	5	2103E+01	
4	2	7	7	2133E+01	4272E+00	1942E+01	4	2	7	7	2133E+01	4	2	7	7	2133E+01	4272E+00	1942E+01	4	2	7	7	2133E+01	
4	2	9	9	2301E+01	4385E+00	2495E+01	4	2	9	9	2301E+01	4	2	9	9	2301E+01	4385E+00	2495E+01	4	2	9	9	2301E+01	
4	3	2	2	1939E+01	8029E+00	2315E+00	4	3	2	2	1939E+01	4	3	2	2	1939E+01	8029E+00	2315E+00	4	3	2	2	1939E+01	
4	3	4	4	1966E+01	8071E+00	3355E+00	4	3	4	4	1966E+01	4	3	4	4	1966E+01	8071E+00	3355E+00	4	3	4	4	1966E+01	
4	3	6	6	2050E+01	7992E+00	1595E+01	4	3	6	6	2050E+01	4	3	6	6	2050E+01	7992E+00	1595E+01	4	3	6	6	2050E+01	
4	3	8	8	2097E+01	7949E+00	2174E+01	4	3	8	8	2097E+01	4	3	8	8	2097E+01	7949E+00	2174E+01	4	3	8	8	2097E+01	
4	4	1	1	1759E+01	1175E+01	0	4	4	1	1	1759E+01	4	4	1	1	1759E+01	1175E+01	0	4	4	1	1	1759E+01	
4	4	3	3	1759E+01	1175E+01	0	4	4	3	3	1759E+01	4	4	3	3	1759E+01	1175E+01	0	4	4	3	3	1759E+01	
4	4	5	5	1854E+01	1190E+01	1203E+01	4	4	5	5	1854E+01	4	4	5	5	1854E+01	1190E+01	1203E+01	4	4	5	5	1854E+01	
4	4	7	7	1815E+01	1133E+01	1942E+01	4	4	7	7	1815E+01	4	4	7	7	1815E+01	1133E+01	1942E+01	4	4	7	7	1815E+01	
4	4	9	9	1741E+01	1062E+01	2495E+01	4	4	9	9	1741E+01	4	4	9	9	1741E+01	1062E+01	2495E+01	4	4	9	9	1741E+01	
4	5	2	2	1424E+01	1424E+01	2315E+00	4	5	2	2	1424E+01	4	5	2	2	1424E+01	1424E+01	2315E+00	4	5	2	2	1424E+01	
4	5	4	4	1446E+01	1446E+01	3372E+00	4	5	4	4	1446E+01	4	5	4	4	1446E+01	1446E+01	3372E+00	4	5	4	4	1446E+01	
4	5	6	6	1398E+01	1398E+01	1572E+01	4	5	6	6	1398E+01	4	5	6	6	1398E+01	1398E+01	1572E+01	4	5	6	6	1398E+01	
5	1	1	1	1424E+01	1424E+01	2174E+01	5	1	1	1	1424E+01	5	1	1	1	1424E+01	1424E+01	2174E+01	5	1	1	1	1424E+01	
5	1	3	3	2447E+01	0	4630E+00	5	1	3	3	2447E+01	5	1	3	3	2447E+01	0	4630E+00	5	1	3	3	2447E+01	
5	1	5	5	2447E+01	0	1203E+01	5	1	5	5	2447E+01	5	1	5	5	2447E+01	0	1203E+01	5	1	5	5	2447E+01	

ELEMENT NO. TYPE	MODAL POINT COORDINATES X Y Z	MODES I J K	MODAL POINT COORDINATES X Y Z	MODES I J K	MODAL POINT COORDINATES X Y Z
8 BRICK MATERIAL NO. 1	.958E+01 .303E+00 .403E+00	1 1 1	.169E+01 .1	1 1 1	.169E+01 .1
		2 1 1	.249E+01 .1	2 1 1	.249E+01 .1
		3 1 1	.226E+01 .935E+00	3 1 1	.226E+01 .935E+00
		4 1 1	.108E+01 .603E+00	4 1 1	.108E+01 .603E+00
		5 1 1	.199E+01 .1	5 1 1	.199E+01 .1
		6 1 1	.255E+01 .1	6 1 1	.255E+01 .1
		7 1 1	.265E+01 .935E+00	7 1 1	.265E+01 .935E+00
		8 1 1	.172E+01 .603E+00	8 1 1	.172E+01 .603E+00
		9 1 1	.207E+01 .1	9 1 1	.207E+01 .1
		10 1 1	.246E+01 .477E+00	10 1 1	.246E+01 .477E+00
8 BRICK MATERIAL NO. 1	.108E+01 .883E+00 .403E+00	1 1 1	.169E+01 .1	1 1 1	.169E+01 .1
		2 1 1	.249E+01 .1	2 1 1	.249E+01 .1
		3 1 1	.226E+01 .935E+00	3 1 1	.226E+01 .935E+00
		4 1 1	.108E+01 .603E+00	4 1 1	.108E+01 .603E+00
		5 1 1	.199E+01 .1	5 1 1	.199E+01 .1
		6 1 1	.255E+01 .1	6 1 1	.255E+01 .1
		7 1 1	.265E+01 .935E+00	7 1 1	.265E+01 .935E+00
		8 1 1	.172E+01 .603E+00	8 1 1	.172E+01 .603E+00
		9 1 1	.207E+01 .1	9 1 1	.207E+01 .1
		10 1 1	.246E+01 .477E+00	10 1 1	.246E+01 .477E+00
8 BRICK MATERIAL NO. 1	.154E+01 .1	1 1 1	.169E+01 .1	1 1 1	.169E+01 .1
		2 1 1	.249E+01 .1	2 1 1	.249E+01 .1
		3 1 1	.226E+01 .935E+00	3 1 1	.226E+01 .935E+00
		4 1 1	.108E+01 .603E+00	4 1 1	.108E+01 .603E+00
		5 1 1	.199E+01 .1	5 1 1	.199E+01 .1
		6 1 1	.255E+01 .1	6 1 1	.255E+01 .1
		7 1 1	.265E+01 .935E+00	7 1 1	.265E+01 .935E+00
		8 1 1	.172E+01 .603E+00	8 1 1	.172E+01 .603E+00
		9 1 1	.207E+01 .1	9 1 1	.207E+01 .1
		10 1 1	.246E+01 .477E+00	10 1 1	.246E+01 .477E+00
8 BRICK MATERIAL NO. 1	.172E+01 .603E+00	1 1 1	.169E+01 .1	1 1 1	.169E+01 .1
		2 1 1	.249E+01 .1	2 1 1	.249E+01 .1
		3 1 1	.226E+01 .935E+00	3 1 1	.226E+01 .935E+00
		4 1 1	.108E+01 .603E+00	4 1 1	.108E+01 .603E+00
		5 1 1	.199E+01 .1	5 1 1	.199E+01 .1
		6 1 1	.255E+01 .1	6 1 1	.255E+01 .1
		7 1 1	.265E+01 .935E+00	7 1 1	.265E+01 .935E+00
		8 1 1	.172E+01 .603E+00	8 1 1	.172E+01 .603E+00
		9 1 1	.207E+01 .1	9 1 1	.207E+01 .1
		10 1 1	.246E+01 .477E+00	10 1 1	.246E+01 .477E+00

ELEMENT NO.	TYPE	NODES			MODAL POINT COORDINATES			MODAL POINT COORDINATES		
		I	J	K	X	Y	Z	X	Y	Z
11	BRICK	1	1	5	199E+01	3.	120E+01	27CF+01	798E+00	120E+01
			3	1	245E+01	0.	120E+01	192E+01	363E+00	120E+01
			5	3	226E+01	935E+00	120E+01	217E+01	0.	156E+01
			3	3	172E+01	643E+00	120E+01	245E+01	0.	157E+01
			1	7	230E+01	0.	199E+01	226E+01	385E+00	157E+01
			5	1	245E+01	0.	199E+01	179E+01	627E+00	157E+01
			3	7	226E+01	935E+00	199E+01	237E+01	0.	194E+01
			3	7	189E+01	643E+00	199E+01	240E+01	477E+00	194E+01
			4	1	222E+01	0.	120E+01	209E+01	709E+00	194E+01
			5	2	240E+01	477E+00	120E+01	217E+01	398E+00	194E+01
			3	5	172E+01	643E+00	120E+01	142E+01	142E+01	120E+01
			5	3	226E+01	935E+00	120E+01	145E+01	802E+00	120E+01
			3	5	172E+01	173E+01	120E+01	179E+01	627E+00	157E+01
			3	3	189E+01	643E+00	120E+01	226E+01	986E+00	157E+01
			5	3	226E+01	935E+00	199E+01	172E+01	173E+01	157E+01
12	BRICK	1	1	5	226E+01	935E+00	199E+01	112E+01	112E+01	197E+01
			3	7	226E+01	935E+00	199E+01	209E+01	709E+00	194E+01
			5	3	120E+01	120E+01	199E+01	209E+01	185E+01	194E+01
			3	5	200E+01	790E+00	120E+01	209E+01	185E+01	194E+01
			4	3	200E+01	790E+00	120E+01	145E+01	145E+01	194E+01
			5	4	200E+01	135E+01	120E+01	145E+01	802E+00	194E+01
			3	5	210E+01	0.	199E+01	108E+01	304E+00	194E+01
			1	7	210E+01	0.	199E+01	215E+01	0.	217E+01
			3	7	145E+01	643E+00	199E+01	215E+01	0.	217E+01
			1	7	145E+01	330E+00	199E+01	107E+01	385E+00	217E+01
			3	9	210E+01	0.	241E+01	145E+01	682E+00	217E+01
			1	9	210E+01	0.	241E+01	200E+01	0.	241E+01
			3	9	145E+01	643E+00	241E+01	215E+01	391E+00	241E+01
			1	9	145E+01	330E+00	199E+01	164E+01	464E+00	241E+01
			2	7	222E+01	0.	199E+01	108E+01	304E+00	241E+01
13	BRICK	1	1	7	145E+01	330E+00	199E+01	931E+00	981E+00	194E+01
			3	7	108E+01	643E+00	199E+01	101E+01	391E+00	194E+01
			3	7	120E+01	120E+01	199E+01	145E+01	385E+00	217E+01
			1	7	665E+00	665E+00	199E+01	107E+01	682E+00	217E+01
			1	3	145E+01	330E+00	199E+01	135E+01	115E+01	217E+01
			3	9	145E+01	612E+00	241E+01	645E+00	665E+00	241E+01
			3	9	108E+01	108E+01	241E+01	164E+01	464E+00	241E+01
			3	9	665E+00	665E+00	241E+01	145E+01	709E+00	241E+01
			2	7	167E+01	665E+00	199E+01	665E+00	665E+00	241E+01
			3	4	154E+01	802E+00	199E+01	101E+01	356E+00	241E+01
			3	7	230E+01	0.	199E+01	209E+01	709E+00	194E+01
			1	7	245E+01	0.	199E+01	217E+01	190E+00	194E+01
			3	7	226E+01	935E+00	199E+01	245E+01	0.	217E+01
			3	7	230E+01	0.	199E+01	209E+01	709E+00	194E+01
			1	9	226E+01	0.	241E+01	237E+01	0.	241E+01
14	BRICK	1	1	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			1	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	9	245E+01	0.	199E+01	245E+01	0.	241E+01
15	BRICK	1	1	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01
			3	7	245E+01	0.	199E+01	245E+01	0.	241E+01

BOUNDARY CONDITIONS.

ELEMENT NUMBER	ELEMENT I J K	TYPE	NOOE OR PRICE	VALUE
1	1 1 1	U2	3	-.1192E-01
		U2	11	-.1192E-01
		U2	12	-.1192E-01
		U2	13	-.1192E-01
		U2	14	-.1192E-01
		U2	15	-.1192E-01
		U2	16	-.1192E-01
		U2	17	-.1192E-01
		U2	18	-.1192E-01
		U2	19	-.1192E-01
		U2	20	-.1192E-01
		U2	21	-.1192E-01
		U2	22	-.1192E-01
		U2	23	-.1192E-01
		U2	24	-.1192E-01
		U2	25	-.1192E-01
		U2	26	-.1192E-01
		U2	27	-.1192E-01
		U2	28	-.1192E-01
		U2	29	-.1192E-01
		U2	30	-.1192E-01
		U2	31	-.1192E-01
		U2	32	-.1192E-01
		U2	33	-.1192E-01
		U2	34	-.1192E-01
		U2	35	-.1192E-01
		U2	36	-.1192E-01
		U2	37	-.1192E-01
		U2	38	-.1192E-01
		U2	39	-.1192E-01
		U2	40	-.1192E-01
		U2	41	-.1192E-01
		U2	42	-.1192E-01
		U2	43	-.1192E-01
		U2	44	-.1192E-01
		U2	45	-.1192E-01
		U2	46	-.1192E-01
		U2	47	-.1192E-01
		U2	48	-.1192E-01
		U2	49	-.1192E-01
		U2	50	-.1192E-01
		U2	51	-.1192E-01
		U2	52	-.1192E-01
		U2	53	-.1192E-01
		U2	54	-.1192E-01
		U2	55	-.1192E-01
		U2	56	-.1192E-01
		U2	57	-.1192E-01
		U2	58	-.1192E-01
		U2	59	-.1192E-01
		U2	60	-.1192E-01
		U2	61	-.1192E-01
		U2	62	-.1192E-01
		U2	63	-.1192E-01
		U2	64	-.1192E-01
		U2	65	-.1192E-01
		U2	66	-.1192E-01
		U2	67	-.1192E-01
		U2	68	-.1192E-01
		U2	69	-.1192E-01
		U2	70	-.1192E-01
		U2	71	-.1192E-01
		U2	72	-.1192E-01
		U2	73	-.1192E-01
		U2	74	-.1192E-01
		U2	75	-.1192E-01
		U2	76	-.1192E-01
		U2	77	-.1192E-01
		U2	78	-.1192E-01
		U2	79	-.1192E-01
		U2	80	-.1192E-01
		U2	81	-.1192E-01
		U2	82	-.1192E-01
		U2	83	-.1192E-01
		U2	84	-.1192E-01
		U2	85	-.1192E-01
		U2	86	-.1192E-01
		U2	87	-.1192E-01
		U2	88	-.1192E-01
		U2	89	-.1192E-01
		U2	90	-.1192E-01
		U2	91	-.1192E-01
		U2	92	-.1192E-01
		U2	93	-.11

BOUNDARY CONDITIONS.

ELEMENT NUMBER	ELEMENT I J K	TYPE	NOZE OR FACE	VALUE
13	1 1 7	LZ	19	--2968E-02
		UZ	17	--2999E-02
		UZ	8	--3470E-02
		UZ	20	--2658E-02
		UZ	5	--2158E-02
		PRESSURE	4	--1425E+04
		SLOPE	5	0.
14	1 3 7	LZ	7	--3410E-02
		UZ	10	--3178E-02
		UZ	19	--3040E-02
		UZ	8	--4628E-02
		UZ	20	--4350E-02
		PRESSURE	4	--1425E+04
		SLOPE	2	0.
15	3 1 7	LZ	7	--1530E-02
		UZ	10	--1530E-02
		LZ	6	--1530E-02
		UZ	19	--1590E-02
		UZ	17	--1580E-02
		SLOPE	5	0.
16	3 3 7	LZ	7	--1530E-02
		UZ	10	--1530E-02
		UZ	19	--2346E-02
		SLOPE	2	0.
17	5 1 1	SLOPE	5	0.
		SLOPE	5	0.
18	5 3 1	SLOPE	6	0.
		SLOPE	2	0.
19	5 1 3	SLOPE	5	0.
20	5 3 3	SLOPE	2	0.
21	5 1 5	SLOPE	5	0.
22	5 3 5	SLOPE	2	0.
23	5 1 7	SLOPE	5	0.
24	5 3 7	SLOPE	2	0.
TIME IN SETUP = 3.438 SECONDS				
TIME IN FORMVF = 10.951 SECONDS				
TIME IN PREFRONT = 1.282				
TOTAL NUMBER OF D.O.F.'S = 624				
D.O.F. IN FRONT = 134				
MAXIMUM ACTIVE STORAGE = 19802				

TOTAL NICKNAME STORAGE	=	686
BUFFER LENGTH	=	7197
TIME IN FORWARD ELIMINATION	=	33.827
NUMBER OF SECTORS (PRUS)	=	1452
TIME IN BACKSUBSTITUTION	=	2.785
TIME IN ZIPP	=	37.898 SECONDS

BLOCK OPTION

BOUNDS

	MIN	MAX		MIN	MAX
X	-1.000E+21	1.000E+21	I	0	0
Y	-1.000E+21	1.000E+21	J	0	0
Z	-1.000E+21	1.000E+21	K	0	0

PRINT LEVEL = 4

STRESS POINTS FOR BRICK (DEGEN) ELEMENTS

POINT	S1	S2	S3
1	-1.000	-1.000	-1.000
2	1.000	-1.000	-1.000
3	1.000	1.000	-1.000
4	-1.000	1.000	-1.000
5	-1.000	-1.000	1.000
6	1.000	-1.000	1.000
7	1.000	1.000	1.000
8	-1.000	1.000	1.000
9	0.000	0.000	1.000

STRESS POINTS FOR PRISM ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	-1.000
2	0.000	1.000	0.000	-1.000
3	0.000	0.000	1.000	-1.000
4	1.000	0.000	0.000	1.000
5	0.000	1.000	0.000	1.000
6	0.000	0.000	1.000	1.000
7	.333	.333	.333	0.000

STRESS POINTS FOR WEDGE ELEMENTS

POINT	S1	S2	S3
1	.050	0.000	-1.000
2	1.000	0.000	-1.000
3	1.000	1.000	-1.000
4	.050	0.000	1.000
5	1.000	0.000	1.000
6	1.000	1.000	1.000
7	.667	.500	0.000

STRESS POINTS FOR TETRA ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	0.000
2	0.000	1.000	0.000	0.000
3	0.000	0.000	1.000	0.000
4	0.000	0.000	0.000	1.000
5	.250	.250	.250	.250

DISPLACEMENTS FOR BRICKM ELEMENT NO. 1 MATERIAL = 1

I	J	K	U	V	M	M
1	1	1	.2181E-01	.3775E-09	-.2184E-01	-.1774E+00
2	1	1	.4821E-01	.3852E-09	-.1892E-01	-.1843E+00
3	1	1	.1484E-02	.3947E-02	-.1932E-01	-.1911E+00
4	1	1	.1318E-01	.5162E-02	-.2184E-01	-.1793E+00
5	1	1	.6280E-02	.3898E-09	-.2284E-01	-.1823E+00
6	1	1	.6244E-02	.2767E-02	-.3743E-01	-.1945E+00
7	1	1	.1841E-01	.7230E-02	-.2851E-01	-.1885E+00
8	1	1	.1840E-01	.1620E-06	-.1638E-01	
9	1	1	.7833E-02	.2831E-02	-.1932E-01	
10	1	1	.1345E-01	.5765E-02	-.1638E-01	
11	1	1	.2851E-01	.5110E-02	-.2184E-01	
12	1	1	.1843E-01	.7195E-09	-.2198E-01	
13	1	1	.7813E-02	.8473E-09	-.1822E-01	
14	1	1	.7293E-02	.3862E-02	-.1863E-01	
15	1	1	.1873E-01	.7471E-02	-.2143E-01	
16	1	1	.9539E-02	.1042E-09	-.1538E-01	
17	1	1	.6294E-02	.1348E-02	-.1913E-02	
18	1	1	.8574E-02	.3978E-02	-.1518E-01	
19	1	1	.1873E-01	.3947E-02	-.2138E-01	

STRESSES FOR BRICKM ELEMENT NO. 1 MATERIAL = 1

POINT	X	Y	Z	SIGMX	SIGMY	SIGMZ	TAUZY	TAUZX	SIGMA1	SIGMA2	SIGMA3	TAUMAX
1	.94E+00	0.	0.	.18E+04	.08E+03	.11E+04	.08E+00	.08E+01	.08E+03	.11E+04	.18E+04	.28E+03
2	.17E+01	0.	0.	.19E+01	.22E-01	.08E-03	.16E-03	.13E-02	.22E-01	.78E-03	.19E-01	.42E-01
3	.16E+01	.68E+00	0.	.13E+04	.11E+04	.11E+04	.53E+00	.98E+01	.11E+04	.11E+04	.11E+04	.98E+02
4	.97E+00	.38E+00	0.	.92E-02	.62E-02	.48E-02	.83E-04	.15E-02	.64E-02	.37E-02	.92E-02	.16E-01
5	.94E+00	0.	.46E+03	.13E+04	.11E+04	.11E+04	.53E+00	.98E+01	.11E+04	.11E+04	.11E+04	.97E+02
6	.17E+01	0.	.46E+03	.19E+01	.22E-01	.08E-03	.16E-03	.13E-02	.22E-01	.78E-03	.19E-01	.42E-01
7	.16E+01	.98E+00	.46E+03	.13E+04	.11E+04	.11E+04	.53E+00	.98E+01	.11E+04	.11E+04	.11E+04	.97E+02
8	.97E+00	.38E+00	.46E+03	.92E-02	.62E-02	.48E-02	.83E-04	.15E-02	.64E-02	.37E-02	.92E-02	.16E-01
9	.13E+01	.26E+00	.23E+00	.13E+04	.11E+04	.11E+04	.53E+00	.98E+01	.11E+04	.11E+04	.11E+04	.97E+02
				.13E+01	.26E+00	.23E+00	.13E+04	.11E+04	.11E+04	.11E+04	.11E+04	.97E+02
				.13E+01	.26E+00	.23E+00	.13E+04	.11E+04	.11E+04	.11E+04	.11E+04	.97E+02

DISPLACEMENTS FOR BRICKM ELEMENT NO. 2 MATERIAL = 1

I	J	K	U	V	M	H
1	3	1	.193E-01	.818E-02	-.214E-01	-.179E+00
2	3	1	.949E-02	.949E-02	.193E-01	-.181E+00
3	5	1	.777E-02	.777E-02	.193E-01	-.185E+00
4	5	1	.149E-01	.149E-01	.214E-01	-.175E+00
1	3	3	.141E-01	.720E-02	.281E-01	-.140E+00
2	3	3	.624E-02	.276E-02	.974E-02	-.199E+00
3	5	3	.532E-02	.532E-02	.102E-01	-.193E+00
4	5	3	.113E-01	.113E-01	.194E-01	-.186E+00
1	3	5	.134E-01	.574E-02	.161E-01	
2	3	5	.806E-02	.574E-02	.161E-01	
3	5	5	.106E-01	.106E-01	.161E-01	
4	5	5	.173E-01	.114E-01	.214E-01	
1	3	2	.167E-01	.747E-02	.214E-01	
2	3	2	.729E-02	.306E-02	.953E-01	
3	5	2	.621E-02	.621E-02	.110E-01	
4	5	2	.130E-01	.130E-01	.289E-01	
1	3	4	.897E-02	.307E-02	.510E-01	
2	3	4	.682E-02	.394E-02	.695E-02	
3	5	4	.743E-02	.743E-02	.155E-01	
4	5	4	.134E-01	.936E-02	.194E-01	

STRESSES FOR BRICKM ELEMENT NO. 2 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPGX	SIGMAY EPGY	SIGMAZ EPGZ	TAUXX GAMMAX	TAUYX GAMMAX	TAUZY GAMMAX	SIGMA1 EPG1	TAU1X GAMMAX	SIGMA2 EPG2	SIGMA3 EPG3	TAUMAX GAMMAX
10	.87E+00	.36E+00	0.	.13E+04	.92E+03	.11E+04	.19E+03	.76E+01	.12E+02	.94E+03	.23E+01	.14E+04	.13E+01	.89E+03
11	.16E+01	.56E+00	6.	.12E+04	.17E+01	.17E+01	.30E+01	.12E+02	.10E+01	.23E+01	.11E+01	.13E+01	.13E+01	.85E+02
12	.12E+01	.12E+01	0.	.12E+04	.12E+02	.12E+02	.60E+02	.62E+01	.12E+01	.11E+01	.11E+01	.13E+02	.13E+02	.13E+02
13	.57E+00	.57E+00	0.	.12E+04	.12E+01	.12E+01	.67E+02	.12E+01	.12E+01	.11E+01	.11E+01	.13E+02	.13E+02	.13E+02
14	.97E+00	.36E+00	.46E+00	.13E+04	.13E+03	.13E+03	.19E+03	.15E+02	.15E+02	.94E+03	.20E+01	.14E+04	.13E+01	.89E+03
15	.16E+01	.56E+00	.46E+00	.12E+04	.17E+01	.17E+01	.30E+01	.12E+02	.10E+01	.23E+01	.11E+01	.13E+01	.13E+01	.85E+02
16	.12E+01	.12E+01	.46E+00	.12E+04	.12E+02	.12E+02	.60E+02	.62E+01	.12E+01	.11E+01	.11E+01	.13E+02	.13E+02	.13E+02
17	.57E+00	.57E+00	.46E+00	.12E+04	.12E+01	.12E+01	.67E+02	.12E+01	.12E+01	.11E+01	.11E+01	.13E+02	.13E+02	.13E+02
18	.11E+01	.72E+00	.23E+00	.13E+04	.13E+04	.13E+04	.19E+03	.15E+02	.15E+02	.94E+03	.20E+01	.14E+04	.13E+01	.89E+03

DISPLACEMENTS FOR BRICK ELEMENT NO. 3 MATERIAL = 1

I	J	K	U	V	M	H
1	1	1	.1021E-01	.3581E-09	-.1192E-01	-.1043E-00
2	1	1	.3087E-02	-.1101E-12	.1830E-21	.2463E-00
3	1	1	.3068E-02	.1021E-02	.3364E-21	-.2432E-00
4	1	1	.9492E-02	.1021E-02	-.1092E-01	-.1811E-00
5	1	1	.6448E-02	.1616E-09	-.9079E-02	-.1970E-00
6	1	1	.3029E-02	-.1099E-12	.3287E-03	-.1936E-00
7	1	1	.3661E-02	.1731E-02	-.3231E-03	-.1931E-00
8	1	1	.0248E-02	.2787E-02	.9743E-02	.1993E-00
9	1	1	.6178E-02	-.9561E-09	-.5460E-02	
10	1	1	.3749E-02	.8701E-03	-.8019E-21	
11	1	1	.6009E-02	.2571E-02	-.5460E-02	
12	1	1	.9039E-02	.2031E-02	-.1092E-01	
13	1	1	.7413E-02	-.6473E-09	-.1222E-11	
14	1	1	.3613E-02	.5089E-12	.1846E-03	
15	1	1	.3799E-02	.1760E-02	-.1652E-03	
16	1	1	.7295E-02	.2082E-01	-.1638E-01	
17	1	1	.4538E-02	-.9542E-09	.3937E-02	
18	1	1	.3518E-02	.0246E-03	.3207E-03	
19	1	1	.4502E-02	.1908E-02	-.3202E-02	
20	1	1	.0298E-02	.1348E-02	-.9013E-02	

STRESSES FOR BRICK ELEMENT NO. 3 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAX EPSY	SIGMAX EPSZ	TAUXY GAMMAX	TAUYZ GAMMAX	TAUZX GAMMAX	SIGMAY EPS1	SIGMAY EPS2	SIGMAY EPS3	TAUMAX GAMMAX
19	.17E+01	0.	0.	.11E+04	.11E+04	.11E+04	.20E+01	.11E+02	.90E+01	.11E+04	.11E+04	.11E+04	.11E+04
20	.24E+01	0.	0.	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
21	.23E+01	.94E+00	0.	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
22	.18E+01	.99E+00	0.	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
23	.17E+01	0.	.46E+00	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
24	.24E+01	0.	.46E+00	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
25	.23E+01	.94E+00	.46E+00	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
26	.18E+01	.99E+00	.46E+00	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01
27	.20E+01	.41E+00	.23E+00	.11E+04	.11E+04	.11E+04	.32E+03	.17E+02	.15E+02	.64E+02	.37E+02	.11E+01	.11E+01

DISPLACEMENTS FOR BRICK ELEMENT NO. 4 MATERIAL = 1

I	J	K	U	V	M	M
3	3	1	.9492E-02	.3927E-02	-.1332E-01	-.1811E+00
3	3	1	.3969E-02	.1691E-02	.7348E-01	-.7377E+00
3	3	1	.3422E-02	.7825E-02	.1548E-01	-.2485E+00
3	3	1	.7777E-02	.7725E-02	.1892E-01	-.1855E+00
3	3	3	.6244E-02	.2767E-02	.3755E-02	-.1895E+00
3	3	3	.3661E-02	.1735E-02	.3215E-03	-.1315E+00
3	3	3	.3364E-02	.3304E-02	.3249E-03	-.1598E+00
3	3	3	.9321E-02	.5215E-02	.1021E-01	-.1993E+00
3	3	3	.6054E-02	.2570E-02	.8908E-02	
3	3	1	.3821E-02	.2782E-02	.8908E-02	
3	3	1	.5101E-02	.5101E-02	.3927E-02	
3	3	1	.6862E-02	.5750E-02	.1237E-01	
3	3	2	.7295E-02	.3862E-02	.1532E-03	
3	3	2	.3795E-02	.1788E-02	.1532E-03	
3	3	2	.3303E-02	.3303E-02	.1532E-03	
3	3	2	.6214E-02	.6214E-02	.1532E-03	
3	3	3	.4502E-02	.1998E-02	.1532E-03	
3	3	3	.3660E-02	.2609E-02	.1532E-03	
3	3	3	.3964E-02	.3964E-02	.1532E-03	
3	3	3	.6628E-02	.3964E-02	.1532E-03	

STRESSES FOR BRICK ELEMENT NO. 4 MATERIAL = 1

POINT	X	Y	Z	SIGMAX	EPST	SIGMAY	EPST	SIGMAZ	EPST	TAUXY	GAMMAX	TAUZX	GAMMAX	TAUYZ	GAMMAX	TAUZY	GAMMAX	SIGMA1	EPST	SIGMA2	EPST	SIGMA3	EPST	TAUMAX	GAMMAX
28	.16E+01	.66E+06	0.	-.13E+04	-.11E+04	.30E-02	.30E-02	.45E-02	.45E-02	-.11E-01	-.11E-01	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.11E-02	-.11E-02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
29	.23E+01	.94E+00	0.	-.16E+04	-.15E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
30	.17E+01	.17E+01	0.	-.16E+04	-.16E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
31	.12E+01	.12E+01	0.	-.12E+04	-.12E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
32	.16E+01	.66E+00	.66E+00	-.13E+04	-.13E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
33	.23E+01	.94E+00	.66E+00	-.12E+04	-.12E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
34	.17E+01	.17E+01	.66E+00	-.12E+04	-.12E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
35	.12E+01	.12E+01	.66E+00	-.13E+04	-.13E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02
36	.17E+01	.11E+01	.23E+00	-.13E+04	-.13E+04	.13E-02	.13E-02	.13E-02	.13E-02	-.13E-02	-.13E-02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	.96E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02	-.13E+02

DISPLACEMENTS FOR BRICK ELEMENT NO. 5 MATERIAL = 1

I	J	K	U	V	M	H
1	1	3	.1519E-01	.1698E-09	-.2284E-01	-.1023E+00
3	1	3	.6848E-02	.7615E-09	-.9979E-02	-.1979E+00
3	1	3	.6244E-02	.2767E-02	-.9745E-02	-.1595E+00
1	3	3	.1411E-01	.7638E-02	-.2931E-01	-.1883E+00
1	1	5	.5961E-02	.2674E-09	-.1246E-01	-.1731E+00
3	1	5	.3848E-02	.2915E-09	-.5846E-02	-.1945E+00
3	3	5	.4763E-02	.2505E-02	-.6874E-02	-.1900E+00
1	3	9	.6822E-02	.8899E-02	-.1237E-01	-.2012E+00
2	1	3	.9515E-03	-.1042E-08	-.1530E-01	
3	2	3	.6298E-02	.1368E-02	-.9513E-02	
2	3	3	.8976E-02	.1978E-02	-.1510E-01	
1	2	3	.1473E-01	.3867E-02	-.2114E-01	
1	1	4	.9158E-02	-.1024E-08	-.1810E-01	
3	1	4	.8497E-02	.1897E-08	-.7238E-01	
3	3	4	.5120E-02	.2201E-02	-.6208E-02	
1	3	4	.9629E-02	.2338E-02	-.1574E-02	
2	1	5	.4214E-02	-.680E-09	-.7781E-01	
3	2	5	.3169E-02	.7436E-03	-.5689E-02	
2	3	5	.6145E-02	.1939E-02	-.1152E-01	
1	2	9	.5879E-02	.4190E-02	-.1270E-01	

STRESSES FOR BRICK ELEMENT NO. 5 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TAUZY GAMMAZY	TAUZX GAMMAX	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
37	.94E+00	0.	.48E+00	.11E+01	.90E+03	-.12E+04	.21E+02	.71E+02	.08E+03	.12E+04	.18E+04	.28E+03
38	.17E+01	0.	.46E+00	-.13E+01	.23E+01	-.12E+02	.38E+02	.12E+01	.23E+01	.76E+03	.28E+01	.43E+01
39	.16E+01	.66E+00	.46E+00	-.13E+02	.12E+04	.12E+04	.17E+01	.47E+02	.12E+04	.12E+04	.12E+04	.79E+02
40	.87E+00	.38E+00	.48E+00	-.13E+02	.12E+04	.12E+04	.43E+01	.79E+02	.57E+02	.38E+02	.62E+02	.12E+01
41	.15E+01	0.	.12E+01	-.13E+01	.11E+04	.11E+04	.22E+02	.10E+01	.58E+02	.41E+02	.68E+02	.13E+01
42	.20E+01	0.	.12E+01	.92E+03	.13E+04	.13E+04	.98E+02	.97E+03	.98E+03	.12E+04	.12E+04	.24E+03
43	.17E+01	.64E+00	.12E+01	.92E+03	.13E+04	.13E+04	.98E+02	.97E+03	.98E+03	.12E+04	.12E+04	.24E+03
44	.12E+01	.34E+00	.12E+01	.92E+03	.13E+04	.13E+04	.98E+02	.97E+03	.98E+03	.12E+04	.12E+04	.24E+03
45	.15E+01	.20E+00	.84E+00	.92E+03	.13E+04	.13E+04	.98E+02	.97E+03	.98E+03	.12E+04	.12E+04	.24E+03

DISPLACEMENTS FOR BRICK ELEMENT NO. 7 MATERIAL = 1

	H	I	J	K	N	A	M	M
1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9
10	10	10	10	10	10	10	10	10
11	11	11	11	11	11	11	11	11
12	12	12	12	12	12	12	12	12
13	13	13	13	13	13	13	13	13
14	14	14	14	14	14	14	14	14
15	15	15	15	15	15	15	15	15
16	16	16	16	16	16	16	16	16
17	17	17	17	17	17	17	17	17
18	18	18	18	18	18	18	18	18
19	19	19	19	19	19	19	19	19
20	20	20	20	20	20	20	20	20
21	21	21	21	21	21	21	21	21
22	22	22	22	22	22	22	22	22
23	23	23	23	23	23	23	23	23
24	24	24	24	24	24	24	24	24
25	25	25	25	25	25	25	25	25
26	26	26	26	26	26	26	26	26
27	27	27	27	27	27	27	27	27
28	28	28	28	28	28	28	28	28
29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31
32	32	32	32	32	32	32	32	32
33	33	33	33	33	33	33	33	33
34	34	34	34	34	34	34	34	34
35	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	36
37	37	37	37	37	37	37	37	37
38	38	38	38	38	38	38	38	38
39	39	39	39	39	39	39	39	39
40	40	40	40	40	40	40	40	40
41	41	41	41	41	41	41	41	41
42	42	42	42	42	42	42	42	42
43	43	43	43	43	43	43	43	43
44	44	44	44	44	44	44	44	44
45	45	45	45	45	45	45	45	45
46	46	46	46	46	46	46	46	46
47	47	47	47	47	47	47	47	47
48	48	48	48	48	48	48	48	48
49	49	49	49	49	49	49	49	49
50	50	50	50	50	50	50	50	50
51	51	51	51	51	51	51	51	51
52	52	52	52	52	52	52	52	52
53	53	53	53	53	53	53	53	53
54	54	54	54	54	54	54	54	54
55	55	55	55	55	55	55	55	55
56	56	56	56	56	56	56	56	56
57	57	57	57	57	57	57	57	57
58	58	58	58	58	58	58	58	58
59	59	59	59	59	59	59	59	59
60	60	60	60	60	60	60	60	60
61	61	61	61	61	61	61	61	61
62	62	62	62	62	62	62	62	62
63	63	63	63	63	63	63	63	63
64	64	64	64	64	64	64	64	64
65	65	65	65	65	65	65	65	65
66	66	66	66	66	66	66	66	66
67	67	67	67	67	67	67	67	67
68	68	68	68	68	68	68	68	68
69	69	69	69	69	69	69	69	69
70	70	70	70	70	70	70	70	70
71	71	71	71	71	71	71	71	71
72	72	72	72	72	72	72	72	72
73	73	73	73	73	73	73	73	73
74	74	74	74	74	74	74	74	74
75	75	75	75	75	75	75	75	75
76	76	76	76	76	76	76	76	76
77	77	77	77	77	77	77	77	77
78	78	78	78	78	78	78	78	78
79	79	79	79	79	79	79	79	79
80	80	80	80	80	80	80	80	80
81	81	81	81	81	81	81	81	81
82	82	82	82	82	82	82	82	82
83	83	83	83	83	83	83	83	83
84	84	84	84	84	84	84	84	84
85	85	85	85	85	85	85	85	85
86	86	86	86	86	86	86	86	86
87	87	87	87	87	87	87	87	87
88	88	88	88	88	88	88	88	88
89	89	89	89	89	89	89	89	89
90	90	90	90	90	90	90	90	90
91	91	91	91	91	91	91	91	91
92	92	92	92	92	92	92	92	92
93	93	93	93	93	93	93	93	93
94	94	94	94	94	94	94	94	94
95	95	95	95	95	95	95	95	95
96	96	96	96	96	96	96	96	96
97	97	97	97	97	97	97	97	97
98	98	98	98	98	98	98	98	98
99	99	99	99	99	99	99	99	99
100	100	100	100	100	100	100	100	100

STRESSES FOR BRICK ELEMENT NO. 7 MATERIAL = 1

POINT	K	Y	Z	SIGMA X	SIGMA Y	SIGMA Z	TAXU X	TAXU Y	TAXU Z	SIGMA EPX	SIGMA EPY	SIGMA EPSZ	TAXUM X	TAXUM Y	TAXUM Z
95	17E+01	0.	48E+00	1.3E+04	1.2E+04	1.2E+04	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
96	24E+01	0.	46E+00	1.1E+02	3.3E+02	1.1E+02	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
97	23E+01	94E+00	44E+00	1.2E+04	1.5E+02	1.5E+02	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
98	18E+01	58E+00	42E+00	1.1E+02	1.5E+02	1.5E+02	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
99	20E+01	0.	12E+01	1.2E+04	2.1E+02	2.1E+02	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
60	24E+01	0.	12E+01	1.1E+04	1.5E+04	1.5E+04	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
61	23E+01	94E+00	12E+01	1.2E+04	1.5E+04	1.5E+04	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
62	17E+01	64E+00	12E+01	1.1E+04	1.2E+04	1.2E+04	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03
63	21E+01	42E+00	04E+00	1.1E+04	1.2E+04	1.2E+04	91E+00	12E+00	12E+00	1.2E+04	1.2E+04	1.2E+04	11E+03	11E+03	11E+03

DISPLACEMENTS FOR BRICKM ELEMENT NO. 8 MATERIAL = 1

I	J	K	U	V	M	M
3	3	3	.6244E-02	.2763E-02	-.9715E-02	-.1995E+00
3	3	3	.3661E-02	.1731E-02	-.3231E-03	-.1931E+00
3	3	3	.3041E-02	.3304E-02	-.3231E-03	-.1931E+00
3	3	3	.3321E-02	.5221E-02	-.3231E-03	-.1931E+00
3	3	3	.4763E-02	.2593E-02	-.3231E-03	-.1931E+00
3	3	3	.3487E-02	.1713E-02	-.3231E-03	-.1931E+00
3	3	3	.3302E-02	.3302E-02	-.3231E-03	-.1931E+00
3	3	3	.3560E-02	.3560E-02	-.3231E-03	-.1931E+00
3	3	3	.4582E-02	.1982E-02	-.3231E-03	-.1931E+00
3	3	3	.3680E-02	.2600E-02	-.3231E-03	-.1931E+00
3	3	3	.3964E-02	.3964E-02	-.3231E-03	-.1931E+00
3	3	3	.6020E-02	.3964E-02	-.3231E-03	-.1931E+00
3	3	3	.5320E-02	.2240E-02	-.3231E-03	-.1931E+00
3	3	3	.3491E-02	.1691E-02	-.3231E-03	-.1931E+00
3	3	3	.3234E-02	.3234E-02	-.3231E-03	-.1931E+00
3	3	3	.5162E-02	.5162E-02	-.3231E-03	-.1931E+00
3	3	3	.3927E-02	.1670E-02	-.3231E-03	-.1931E+00
3	3	3	.3613E-02	.2613E-02	-.3231E-03	-.1931E+00
3	3	3	.3953E-02	.3953E-02	-.3231E-03	-.1931E+00
3	3	3	.5592E-02	.4092E-02	-.3231E-03	-.1931E+00

STRESSES FOR BRICKM ELEMENT NO. 8 MATERIAL = 1

POINT	X	Y	Z	SIGMAX	EPST	SIGMAY	SIGMAZ	TAUXY	GAMMAX	TAUZX	GAMMAX	SIGMA1	SIGMA2	SIGMA3	TAUMAX
64	.10E+01	.16E+00	.46E+00	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
65	.23E+01	.94E+00	.46E+00	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
66	.17E+01	.17E+01	.46E+00	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
67	.12E+01	.12E+01	.46E+00	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
68	.17E+01	.64E+00	.12E+01	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
69	.23E+01	.94E+00	.12E+01	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
70	.17E+01	.17E+01	.12E+01	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
71	.15E+01	.11E+01	.12E+01	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
72	.17E+01	.11E+01	.63E+00	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04

DISPLACEMENTS FOR BRICKM ELEMENT NO. 9 MATERIAL = 1

I	J	K	U	V	M	H
1	1	5	.589E-02	.267E-09	-.128E-01	-.173E+00
3	1	3	.341E-02	.291E-09	-.91E-02	.190E+00
3	1	5	.676E-02	.250E-02	-.687E-02	-.190E+00
1	3	5	.662E-02	.809E-02	-.128E-01	-.281E+00
1	1	7	.494E-02	.105E-09	-.324E-02	-.175E+00
3	1	7	.332E-02	.116E-09	-.219E-02	-.194E+00
3	3	7	.664E-02	.350E-02	-.482E-02	-.285E+00
1	3	7	.477E-02	.782E-02	-.831E-02	.222E+00
2	1	5	.421E-02	-.450E-09	-.778E-02	
3	2	5	.389E-02	.793E-03	-.949E-02	
2	3	5	.614E-02	.193E-02	-.186E-01	
1	2	5	.587E-02	.415E-02	-.127E-01	
1	1	6	.699E-02	-.321E-09	-.731E-02	
3	1	6	.326E-02	.691E-09	-.311E-02	
3	3	6	.480E-02	.321E-02	-.576E-02	
1	3	6	.530E-02	.768E-02	-.984E-02	
2	1	7	.374E-02	-.129E-09	-.266E-02	
3	2	7	.398E-02	.187E-02	-.232E-02	
2	3	7	.509E-02	.525E-02	-.526E-02	
1	2	7	.479E-02	.619E-02	-.597E-02	

STRESSES FOR BRICKM ELEMENT NO. 9 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPGX	SIGMAX EPGY	SIGMAX EPGZ	TAUZY GAMMAZY	TAUZX GAMMAX	SIGMA1 EPG1	SIGMA2 EPG2	SIGMA3 EPG3	TAUMAX GAMMAX
73	.19E+01	0.	.12E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
74	.28E+01	0.	.12E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
75	.17E+01	.64E+00	.12E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
76	.12E+01	.34E+00	.12E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
77	.21E+01	0.	.19E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
78	.23E+01	0.	.19E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
79	.19E+01	.69E+00	.19E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
80	.19E+01	.33E+00	.19E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02
81	.19E+01	.32E+00	.16E+01	.12E+01	.12E+01	.12E+01	.26E+02	.26E+02	.12E+01	.12E+01	.12E+01	.26E+02

DISPLACEMENTS FOR BRICK ELEMENT NO. 10 MATERIAL = 1

I	J	K	U	V	W	H
1	3	5	.662E-02	.809E-02	-.126E-01	-.201E+00
2	3	5	.876E-02	.289E-02	-.187E-02	-.190E+00
3	3	5	.556E-02	.565E-02	-.191E-02	-.203E+00
4	3	5	.903E-02	.903E-02	-.135E-01	-.216E+00
5	3	7	.477E-02	.702E-02	-.101E-02	-.225E+00
6	3	7	.664E-02	.350E-02	-.822E-02	-.205E+00
7	3	7	.563E-02	.563E-02	-.311E-02	-.217E+00
8	3	7	.839E-02	.839E-02	-.781E-02	-.218E+00
9	3	5	.514E-02	.393E-02	-.105E-01	
10	3	5	.559E-02	.406E-02	-.837E-02	
11	3	5	.756E-02	.756E-02	-.121E-01	
12	3	5	.844E-02	.971E-02	-.135E-01	
13	3	6	.538E-02	.786E-02	-.904E-02	
14	3	6	.480E-02	.321E-02	-.574E-02	
15	3	6	.637E-02	.603E-02	-.724E-02	
16	3	6	.882E-02	.882E-02	-.105E-01	
17	3	7	.509E-02	.525E-02	-.524E-02	
18	3	7	.542E-02	.501E-02	-.509E-02	
19	3	7	.723E-02	.723E-02	-.646E-02	
20	3	7	.624E-02	.956E-02	-.733E-02	

STRESSES FOR BRICK ELEMENT NO. 10 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TAUXY GAMMAX	TAUZX GAMMAX	TAUYZ GAMMAX	TAUXZ GAMMAX	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
82	.12E+01	.34E+00	.12E+01	-.14E-04	-.15E-04	-.15E-04	.54E-01	.14E-02	.41E-02	.14E-02	-.12E-04	-.14E-04	-.14E-04	.13E+03
83	.17E+01	.54E+00	.12E+01	-.17E-02	-.16E-01	-.10E-02	.81E-03	.17E-02	.65E-02	.17E-02	-.9E-02	-.6E-02	-.17E-01	.2E-01
84	.11E+01	.11E+01	.12E+01	-.13E-02	-.12E-04	-.12E-04	-.23E-02	.80E-02	.57E-02	.80E-02	-.12E-04	-.12E-04	-.14E-04	.12E+03
85	.67E+00	.57E+00	.12E+01	-.12E-02	-.13E-04	-.12E-04	-.36E-02	.14E-01	.54E-02	.14E-01	-.7E-02	-.2E-02	-.11E-01	.1E-01
86	.15E+01	.33E+00	.19E+01	-.15E-02	-.14E-04	-.13E-02	.17E-02	.13E-02	.17E-02	.13E-02	-.12E-04	-.12E-04	-.14E-04	.12E+03
87	.19E+01	.55E+00	.19E+01	-.19E-02	-.18E-04	-.15E-02	.27E-02	.15E-02	.27E-02	.15E-02	-.13E-04	-.13E-04	-.15E-04	.12E+03
88	.12E+01	.12E+01	.19E+01	-.12E-02	-.12E-04	-.12E-04	-.71E-02	.15E-02	.15E-02	.15E-02	-.13E-04	-.13E-04	-.15E-04	.12E+03
89	.67E+00	.57E+00	.19E+01	-.12E-02	-.12E-04	-.12E-04	.21E-02	.15E-02	.15E-02	.15E-02	-.13E-04	-.13E-04	-.15E-04	.12E+03
90	.12E+01	.52E+00	.16E+01	-.12E-02	-.12E-04	-.12E-04	.33E-02	.15E-02	.15E-02	.15E-02	-.13E-04	-.13E-04	-.15E-04	.12E+03

DISPLACEMENTS FOR BRICKM ELEMENT NO. 12 MATERIAL = 1

I	J	K	U	V	M	H
3	3	5	.673E-02	.250E-02	-.587E-02	-.198E+00
3	3	5	.349E-03	.171E-02	.750E-03	-.207E+00
5	5	5	.130E-02	.300E-02	-.743E-03	-.209E+00
3	3	5	.450E-02	.598E-02	-.891E-02	-.203E+00
3	3	7	.362E-02	.350E-02	-.402E-02	-.205E+00
5	5	7	.362E-02	.130E-02	-.171E-02	-.207E+00
3	3	7	.351E-02	.324E-02	-.118E-02	-.206E+00
3	3	7	.424E-02	.989E-02	-.591E-02	-.212E+00
4	3	5	.303E-02	.167E-02	-.377E-02	
5	4	5	.343E-02	.261E-02	-.818E-03	
5	4	5	.393E-02	.353E-02	-.525E-02	
3	3	6	.450E-02	.406E-02	-.837E-02	
3	3	6	.450E-02	.318E-02	-.573E-02	
5	5	6	.350E-02	.170E-02	-.959E-03	
5	5	6	.343E-02	.342E-02	-.962E-03	
3	3	6	.463E-02	.683E-02	-.782E-02	
4	3	7	.393E-02	.219E-02	-.258E-02	
5	4	7	.362E-02	.279E-02	-.113E-02	
4	5	7	.429E-02	.429E-02	-.340E-02	
3	4	7	.542E-02	.501E-02	-.589E-02	

STRESSES FOR BRICKM ELEMENT NO. 12 MATERIAL = 1

POINT	K	Y	Z	SIGMAX	EPST	SIGMAY	EPST	SIGMAZ	TAUXY	GAMMAX	TAUZY	GAMMAX	TAUXZ	GAMMAX	SIGMA1	EPST	SIGMA2	EPST	SIGMA3	EPST	TAUMAX	GAMMAX
100	.17E+01	.54E+00	.12E+01	-.13E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04	-.12E+04
101	.23E+01	.94E+00	.12E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
102	.17E+01	.17E+01	.12E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
103	.11E+01	.11E+01	.12E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
104	.19E+01	.65E+00	.19E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
105	.23E+01	.94E+00	.19E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
106	.17E+01	.17E+01	.19E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
107	.12E+01	.12E+01	.19E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04
108	.17E+01	.11E+01	.16E+01	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04	-.13E+04

DISPLACEMENTS FOR BRICK ELEMENT NO. 13 MATERIAL = 1

[illegible]

STRESSES FOR POLYMER ELEMENT NO. 13 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TANX GAMMAX	TANZ GAMMAZ	STORM1 EPS1	STORM2 EPS2	SIGMA3 EPS3	TANW3 GAMMAW3
109	.21E+01	8.	.19E+01	.14E+00	.90E+03	.11E+00	.50E+02	.39E+01	.97E+00	.11E+00	.10E+00	.12E+03
110	.23E+01	8.	.19E+01	.13E+00	.11E+01	.41E+00	.92E+02	.61E+03	.11E+01	.65E+02	.12E+01	.12E+03
111	.19E+01	.65E+00	.19E+01	.26E+03	.86E+03	.73E+03	.94E+01	.12E+01	.52E+00	.12E+00	.10E+00	.10E+00
112	.19E+01	.33E+00	.19E+01	.13E+00	.13E+03	.13E+02	.93E+02	.33E+02	.12E+00	.43E+02	.14E+00	.12E+03
113	.21E+01	8.	.24E+01	.17E+01	.16E+03	.27E+02	.92E+02	.37E+02	.62E+02	.95E+02	.71E+02	.11E+03
114	.23E+01	8.	.24E+01	.16E+02	.79E+03	.64E+02	.30E+02	.69E+00	.13E+00	.15E+00	.10E+00	.10E+00
115	.21E+01	8.	.24E+01	.18E+00	.18E+02	.12E+00	.53E+02	.84E+01	.13E+02	.13E+00	.10E+00	.10E+00
116	.23E+01	8.	.24E+01	.13E+00	.13E+01	.13E+03	.84E+02	.13E+01	.20E+02	.69E+01	.10E+01	.31E+01
117	.23E+01	8.	.24E+01	.15E+02	.21E+02	.21E+02	.57E+01	.77E+00	.32E+03	.13E+00	.13E+00	.13E+02
118	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
119	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
120	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
121	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
122	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
123	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
124	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
125	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
126	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
127	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
128	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
129	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
130	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
131	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
132	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
133	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
134	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
135	.18E+01	.51E+00	.24E+01	.14E+00	.13E+00	.13E+00	.96E+02	.59E+01	.22E+02	.21E+02	.13E+00	.13E+02
136	.18E+01	.51E+00										

I

STRESSES FOR QUICK ELEMENT NO. 14 MATERIAL = 1

PCINT	Y	Z	SIGMAX	SIG
1	1	1	1	1
2	1	1	1	1
3	1	1	1	1
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	1
8	1	1	1	1
9	1	1	1	1
10	1	1	1	1
11	1	1	1	1
12	1	1	1	1
13	1	1	1	1
14	1	1	1	1
15	1	1	1	1
16	1	1	1	1
17	1	1	1	1
18	1	1	1	1
19	1	1	1	1
20	1	1	1	1
21	1	1	1	1
22	1	1	1	1
23	1	1	1	1
24	1	1	1	1
25	1	1	1	1
26	1	1	1	1
27	1	1	1	1
28	1	1	1	1
29	1	1	1	1
30	1	1	1	1
31	1	1	1	1
32	1	1	1	1
33	1	1	1	1
34	1	1	1	1
35	1	1	1	1
36	1	1	1	1
37	1	1	1	1
38	1	1	1	1
39	1	1	1	1
40	1	1	1	1
41	1	1	1	1
42	1	1	1	1
43	1	1	1	1
44	1	1	1	1
45	1	1	1	1
46	1	1	1	1
47	1	1	1	1
48	1	1	1	1
49	1	1	1	1
50	1	1	1	1
51	1	1	1	1
52	1	1	1	1
53	1	1	1	1
54	1	1	1	1
55	1	1	1	1
56	1	1	1	1
57	1	1	1	1
58	1	1	1	1
59	1	1	1	1
60	1	1	1	1
61	1	1	1	1
62	1	1	1	1
63	1	1	1	1
64	1	1	1	1
65	1	1	1	1
66	1	1	1	1
67	1	1	1	1
68	1	1	1	1
69	1	1	1	1
70	1	1	1	1
71	1	1	1	1
72	1	1	1	1
73	1	1	1	1
74	1	1	1	1
75	1	1	1	1
76	1	1	1	1
77	1	1	1	1
78	1	1	1	1
79	1	1	1	1
80	1	1	1	1
81	1	1	1	1
82	1	1	1	1
83	1	1	1	1
84	1	1	1	1
85	1	1	1	1
86	1	1	1	1
87	1	1	1	1
88	1	1	1	1
89	1	1	1	1
90	1	1	1	1
91	1	1	1	1
92	1	1	1	1
93	1	1	1	1
94	1	1	1	1

45

DISPLACEMENTS FOR BRICK ELEMENT NO. 15 MATERIAL = 1

I	J	K	U	V	M	H
3	1	7	.3332E-02	.1165E-09	-.2157E-02	-.1971E+00
5	1	7	.3089E-02	-.1245E-12	-.1157E-02	-.1935E+00
5	3	7	.3624E-02	.1310E-02	-.1171E-02	-.2078E+00
5	3	7	.4643E-02	.3901E-02	-.6023E-02	-.2097E+00
3	1	9	.2705E-02	.6421E-10	-.1840E-02	-.2840E+00
3	1	9	.2466E-02	-.1231E-12	-.1930E-02	-.2099E+00
5	3	9	.3148E-02	.1554E-02	-.1530E-02	-.2167E+00
3	3	9	.6100E-02	.4098E-02	-.2978E-02	-.2897E+00
4	1	7	.3262E-02	-.1205E-09	-.1653E-02	
5	2	7	.3248E-02	.8496E-03	-.1167E-02	
4	3	7	.3997E-02	.2191E-02	-.2588E-02	
3	2	7	.3960E-02	.1072E-02	-.2621E-02	
3	1	8	.3151E-02	-.1804E-09	-.2163E-02	
3	1	8	.2987E-02	.6328E-12	-.1383E-02	
5	3	8	.3529E-02	.1005E-02	-.1351E-02	
3	3	8	.6433E-02	.3076E-02	-.3610E-02	
4	1	9	.2533E-02	.7808E-10	-.1640E-02	
5	2	9	.2661E-02	.7508E-03	-.1530E-02	
4	3	9	.3446E-02	.2297E-02	-.1980E-02	
3	2	9	.3400E-02	.1529E-02	-.2080E-02	

STRESSES FOR BRICK ELEMENT NO. 15 MATERIAL = 1

POINT	X	Y	Z	SIGMAX FPSX	SIGMAY FPSY	SIGMAZ FPSZ	TAUXX GAMMAX	TAUYX GAMMAX	TAUZY GAMMAX	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
127	.23E+01	0.	.19E+01	-.12E+04	-.12E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
128	.24E+01	0.	.19E+01	-.12E+04	-.12E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
129	.23E+01	.94E+00	.19E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
130	.19E+01	.69E+00	.19E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
131	.23E+01	0.	.24E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
132	.24E+01	0.	.24E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
133	.23E+01	.94E+00	.24E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
134	.16E+01	.61E+00	.24E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02
135	.23E+01	.43E+00	.22E+01	-.13E+04	-.13E+04	-.13E+04	.83E+01	.83E+01	-.13E+01	-.12E+04	-.12E+04	-.13E+04	.83E+02

[illegible][illegible]

DISPLACEMENTS FOR BRICK ELEMENT NO. 17 MATERIAL = 2

I	J	K	U	V	M
5	1	1	.3687E-02	-.1161E-12	.1436E-21
7	1	1	.3554E-02	-.1761E-12	.5547E-13
7	3	1	.3875E-02	.1721E-02	.5275E-13
5	3	1	.3866E-02	.1801E-02	.3346E-21
5	1	3	.3429E-02	-.1099E-12	.3207E-03
7	1	3	.3398E-02	-.1782E-12	-.2561E-03
7	3	3	.3663E-02	.1648E-02	-.2729E-03
5	3	3	.3881E-02	.1739E-02	.3231E-03
6	1	1	.3671E-02	.2151E-12	.3873E-13
7	2	1	.3719E-02	.8297E-03	.6284E-13
6	3	1	.3859E-02	.1761E-02	.6474E-13
5	2	1	.3748E-02	.8781E-03	.8519E-21
5	1	2	.3613E-02	.5865E-12	.1646E-03
7	1	2	.3581E-02	.6821E-12	.1244E-03
7	3	2	.3788E-02	.1698E-02	.1332E-03
5	3	2	.3798E-02	.1788E-02	.1662E-03
6	1	3	.3413E-02	.2831E-12	.2883E-03
7	2	3	.3478E-02	.7826E-03	.6881E-03
6	3	3	.3661E-02	.1698E-02	-.2979E-03
5	2	3	.3581E-02	.8298E-03	-.3207E-03

STRESSES FOR BRICK ELEMENT NO. 17 MATERIAL = 2

PCINT	X	Y	Z	SIGMX	EPGX	SIGMY	EPGY	SIGMZ	EPGZ	TAUMX	GAMMAX	TAUMY	GAMMAX	TAUMZ	GAMMAX	TAUMX	GAMMAX	SIGMA1	EPG1	SIGMA2	EPG2	SIGMA3	EPG3	TAUMAX	GAMMAX
149	.24E+01	0.	0.	-.19E+00	.69E+00	.69E+00	.17E+02	-.73E-03	.73E-03	.59E+00	.59E+00	.52E+00	.52E+00	-.96E+03	-.96E+03	-.96E+03	-.96E+03	.59E+00	.17E+02	-.67E+03	-.67E+03	-.67E+03	-.67E+03	.25E+00	.25E+00
146	.25E+01	0.	0.	-.83E+03	.67E+00	.67E+00	.16E+02	-.52E-03	.52E-03	.54E+00	.54E+00	.78E+00	.78E+00	-.97E+03	-.97E+03	-.97E+03	-.97E+03	.67E+00	.16E+02	-.65E+03	-.65E+03	-.65E+03	-.65E+03	.24E+00	.24E+00
147	.23E+01	.96E+00	0.	.49E+00	.39E+00	.39E+00	.13E+02	-.56E-03	.56E-03	.17E+00	.17E+00	-.37E+00	-.37E+00	-.11E+00	-.11E+00	-.11E+00	-.11E+00	.66E+00	.16E+02	-.66E+03	-.66E+03	-.66E+03	-.66E+03	.25E+00	.25E+00
148	.23E+01	.96E+00	0.	.68E+00	.61E+00	.61E+00	.14E+02	-.74E-03	.74E-03	.15E+00	.15E+00	-.33E+00	-.33E+00	-.97E+00	-.97E+00	-.97E+00	-.97E+00	.89E+00	.17E+02	-.66E+03	-.66E+03	-.66E+03	-.66E+03	.25E+00	.25E+00
149	.24E+01	0.	.46E+00	-.30E+00	.46E+00	.46E+00	.16E+02	-.66E-03	.66E-03	.54E+00	.54E+00	.50E+00	.50E+00	-.11E+00	-.11E+00	-.11E+00	-.11E+00	.66E+00	.16E+02	-.66E+03	-.66E+03	-.66E+03	-.66E+03	.25E+00	.25E+00
150	.25E+01	0.	.46E+00	.43E+00	.43E+00	.43E+00	.15E+02	-.58E-03	.58E-03	.60E+00	.60E+00	.29E+00	.29E+00	-.11E+00	-.11E+00	-.11E+00	-.11E+00	.67E+00	.16E+02	-.67E+03	-.67E+03	-.67E+03	-.67E+03	.24E+00	.24E+00
151	.23E+01	.96E+00	.46E+00	.53E+00	.38E+00	.38E+00	.12E+02	-.82E-03	.82E-03	.15E+00	.15E+00	-.52E+00	-.52E+00	-.75E+00	-.75E+00	-.75E+00	-.75E+00	.53E+00	.12E+02	-.68E+03	-.68E+03	-.68E+03	-.68E+03	.24E+00	.24E+00
152	.23E+01	.94E+00	.46E+00	.44E+00	.39E+00	.39E+00	.13E+02	-.66E-03	.66E-03	.17E+00	.17E+00	-.36E+00	-.36E+00	-.96E+00	-.96E+00	-.96E+00	-.96E+00	.66E+00	.13E+02	-.67E+03	-.67E+03	-.67E+03	-.67E+03	.24E+00	.24E+00
153	.24E+01	.48E+00	.23E+00	.15E+00	.48E+00	.48E+00	.16E+02	-.83E-03	.83E-03	.15E+00	.15E+00	-.36E+00	-.36E+00	-.96E+00	-.96E+00	-.96E+00	-.96E+00	.59E+00	.17E+02	-.66E+03	-.66E+03	-.66E+03	-.66E+03	.27E+00	.27E+00

I	5	3	1	U	V	W	X
5	1	1	1	1	1	1	1
7	3	3	3	3	3	3	3
7	5	5	5	5	5	5	5
7	7	7	7	7	7	7	7
6	3	3	3	3	3	3	3
6	5	5	5	5	5	5	5
6	7	7	7	7	7	7	7
5	3	3	3	3	3	3	3
5	5	5	5	5	5	5	5
5	7	7	7	7	7	7	7
4	3	3	3	3	3	3	3
4	5	5	5	5	5	5	5
4	7	7	7	7	7	7	7
3	3	3	3	3	3	3	3
3	5	5	5	5	5	5	5
3	7	7	7	7	7	7	7
2	3	3	3	3	3	3	3
2	5	5	5	5	5	5	5
2	7	7	7	7	7	7	7
1	3	3	3	3	3	3	3
1	5	5	5	5	5	5	5
1	7	7	7	7	7	7	7
0	3	3	3	3	3	3	3
0	5	5	5	5	5	5	5
0	7	7	7	7	7	7	7
0	9	9	9	9	9	9	9
0	A	A	A	A	A	A	A
0	B	B	B	B	B	B	B
0	C	C	C	C	C	C	C
0	D	D	D	D	D	D	D
0	E	E	E	E	E	E	E
0	F	F	F	F	F	F	F
0	G	G	G	G	G	G	G
0	H	H	H	H	H	H	H
0	I	I	I	I	I	I	I
0	J	J	J	J	J	J	J
0	K	K	K	K	K	K	K
0	L	L	L	L	L	L	L
0	M	M	M	M	M	M	M
0	N	N	N	N	N	N	N
0	O	O	O	O	O	O	O
0	P	P	P	P	P	P	P
0	Q	Q	Q	Q	Q	Q	Q
0	R	R	R	R	R	R	R
0	S	S	S	S	S	S	S
0	T	T	T	T	T	T	T
0	U	U	U	U	U	U	U
0	V	V	V	V	V	V	V
0	W	W	W	W	W	W	W
0	X	X	X	X	X	X	X
0	Y	Y	Y	Y	Y	Y	Y
0	Z	Z	Z	Z	Z	Z	Z
0	a	a	a	a	a	a	a
0	b	b	b	b	b	b	b
0	c	c	c	c	c	c	c
0	d	d	d	d	d	d	d
0	e	e	e	e	e	e	e
0	f	f	f	f	f	f	f
0	g	g	g	g	g	g	g
0	h	h	h	h	h	h	h
0	i	i	i	i	i	i	i
0	j	j	j	j	j	j	j
0	k	k	k	k	k	k	k
0	l	l	l	l	l	l	l
0	m	m	m	m	m	m	m
0	n	n	n	n	n	n	n
0	o	o	o	o	o	o	o
0	p	p	p	p	p	p	p
0	q	q	q	q	q	q	q
0	r	r	r	r	r	r	r
0	s	s	s	s	s	s	s
0	t	t	t	t	t	t	t
0	u	u	u	u	u	u	u
0	v	v	v	v	v	v	v
0	w	w	w	w	w	w	w
0	x	x	x	x	x	x	x
0	y	y	y	y	y	y	y
0	z	z	z	z	z	z	z
0	0	0	0	0	0	0	0
0	1	1	1	1	1	1	1
0							

STRESSES FOR BRICK ELEMENT NO. 10 MATERIAL = 2

POINT	X	Y	Z	SIGMAX	SIGMAY	SIGMAZ	TAUXX	TAUYY	TAUZZ	SIGMA1	SIGMA2	SIGMA3	TUMAX	TUMINY	TUMINZ
154	2.3E+01	9.9E+00	0.	1.6E-01	7.2E-02	7.2E-02	1.1E-01	1.8E-02	3.6E-03	1.1E-02	6.9E-03	1.1E-02	3.8E-03	5.8E-04	5.8E-04
155	2.3E+01	9.6E+00	0.	1.6E-01	5.4E-02	5.4E-02	1.1E-01	1.8E-02	3.7E-03	1.1E-02	5.9E-03	1.1E-02	3.7E-03	5.7E-04	5.7E-04
156	1.0E+01	1.0E+01	0.	2.5E-02	2.7E-02	2.7E-02	9.7E-03	2.6E-03	9.7E-03	1.9E-02	5.9E-03	1.9E-02	5.9E-03	5.7E-04	5.7E-04
157	1.7E+01	1.7E+01	6.	9.4E-03	5.7E-03	5.9E-03	7.4E-03	2.3E-02	6.1E-04	1.9E-02	5.9E-03	1.9E-02	5.9E-03	5.6E-04	5.6E-04
158	2.3E+01	9.4E+00	0.	1.1E-01	5.9E-02	5.9E-02	7.4E-03	2.2E-02	1.8E-04	1.9E-02	5.9E-03	1.9E-02	5.9E-03	5.5E-04	5.5E-04
159	2.3E+01	9.6E+00	0.	1.7E-01	6.6E-02	6.6E-02	9.5E-03	1.5E-02	4.9E-03	1.7E-02	6.7E-03	1.7E-02	6.7E-03	5.4E-04	5.4E-04
160	1.0E+01	1.0E+01	0.	9.7E-04	1.4E-02	1.4E-02	9.7E-04	1.5E-02	4.3E-04	1.7E-02	6.0E-03	1.7E-02	6.0E-03	5.3E-04	5.3E-04
161	1.7E+01	1.7E+01	0.	1.0E-03	6.5E-03	6.5E-03	9.4E-04	2.5E-03	3.8E-04	1.7E-02	6.0E-03	1.7E-02	6.0E-03	5.2E-04	5.2E-04
162	2.1E+01	1.4E+01	2.3E+01	1.4E+05	2.4E+05	2.4E+04	1.4E+05	2.4E+05	1.0E+03	1.7E-02	6.0E-03	1.7E-02	6.0E-03	5.1E-04	5.1E-04
163	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
164	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
165	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
166	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
167	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
168	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
169	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
170	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
171	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
172	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
173	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04
174	2.1E+01	1.4E+01	2.3E+01	1.1E+05	2.1E+05	2.1E+04	1.1E+05	2.1E+05	8.6E+02	1.6E-02	5.8E-03	1.6E-02	5.8E-03	5.0E-04	5.0E-04

DISPLACEMENTS FOR BRICK ELEMENT NO. 19 MATERIAL = 2

I	J	K	U	V	W
5	1	3	.3429E-02	-.1099E-12	-.3207E-03
7	1	3	.2398E-02	-.1703E-12	-.5561E-03
7	3	3	.1663E-02	-.1648E-02	-.2729E-03
5	3	3	.3661E-02	.1733E-02	-.3231E-03
5	1	5	.3076E-02	-.1167E-12	-.7247E-03
7	1	5	.3047E-02	-.1688E-12	-.7218E-03
7	3	5	.3498E-02	.1613E-02	-.7510E-03
5	3	5	.3487E-02	.1717E-02	-.7580E-03
6	1	3	.3413E-02	.2035E-12	-.7683E-03
7	2	3	.3478E-02	.7826E-03	-.7801E-03
6	3	3	.3661E-02	.1690E-02	-.5979E-03
5	2	3	.3501E-02	.8296E-03	-.3207E-03
5	1	4	.3169E-02	.5361E-12	-.8255E-03
7	1	4	.3181E-02	.6097E-12	-.8917E-03
7	3	4	.3498E-02	.1594E-02	-.5165E-03
5	3	4	.3491E-02	.1688E-02	-.8324E-03
6	1	5	.3068E-02	.1964E-12	-.7231E-03
7	2	5	.3188E-02	.7447E-03	-.7293E-03
6	3	5	.3492E-02	.1665E-02	-.7424E-03
9	2	5	.3288E-02	.8047E-03	-.7281E-03

STRESSES FOR BRICK ELEMENT NO. 19 MATERIAL = 2

POINT	X	Y	Z	SIGMAX	SIGMY	SIGMAZ	TAUXY	TAUYZ	TAUZX	SIGMA1	SIGMA2	SIGMA3	TRUWAX
163	.24E+01	0.	.46E+00	.14E+04	.48E+09	-.30E+04	.87E+03	.58E+02	.71E+01	.48E+09	-.10E+04	-.30E+04	.25E+03
164	.25E+01	0.	.46E+00	.49E+03	.16E-02	-.56E-03	.58E-04	.43E-05	.61E-06	.16E-02	-.69E-03	-.56E-03	.22E+03
165	.23E+01	.96E+00	.46E+00	.61E+03	.82E+05	-.69E+04	.68E+03	.29E+02	.28E+02	.82E+05	-.61E+03	-.69E+04	.20E+03
166	.23E+01	.96E+00	.46E+00	.37E-03	.15E-02	-.64E-03	.52E-04	.2E-05	.24E-05	.15E-02	-.17E-03	-.64E-03	.21E+03
167	.24E+01	.96E+00	.46E+00	.13E-03	.12E-02	-.67E-03	.13E-02	.45E-06	.64E-05	.15E-02	-.48E-03	-.67E-03	.22E+03
168	.25E+01	.96E+00	.46E+00	.58E+04	.60E+09	-.59E+04	.17E+03	.96E+02	.14E+04	.60E+09	-.25E+04	-.59E+04	.25E+03
169	.23E+01	.96E+00	.46E+00	.17E-03	.13E-02	-.58E-03	.15E-02	.48E-04	.13E-04	.16E-02	-.64E-03	-.58E-03	.22E+03
170	.23E+01	.94E+00	.42E+01	.49E+03	.15E-02	-.53E-03	.66E-04	.41E-05	.19E-04	.15E-02	-.69E-03	-.49E+03	.21E+03
171	.24E+01	.94E+00	.83E+00	.32E+03	.14E-02	-.61E-03	.88E-04	.66E-06	.32E-05	.14E-02	-.32E-03	-.61E-03	.20E+03
				.38E+04	.34E+05	-.75E+04	.18E+03	.27E+02	.15E+03	.34E+05	-.28E+04	-.75E+04	.23E+03
				.13E-03	.12E-02	-.62E-03	.12E-02	.23E-05	.13E-04	.14E-02	-.30E-03	-.62E-03	.20E+03
				.46E+04	.34E+05	-.31E+04	.16E+03	.77E+02	.22E+02	.34E+05	-.18E+04	-.46E+04	.24E+03
				.19E-03	.13E-02	-.53E-03	.14E-02	.67E-04	.19E-05	.15E-02	-.68E-03	-.19E-03	.21E+03
				.14E+04	.45E+05	-.39E+04	.91E+03	.24E+02	.52E+02	.45E+05	-.65E+03	-.39E+04	.25E+03
				.36E-03	.15E-02	-.59E-03	.79E-03	.21E-04	.45E-05	.15E-02	-.64E-03	-.36E-03	.22E+03

DISPLACEMENTS FOR BRICK ELEMENT NO. 20 MATERIAL = 2

[illegible]

STRESSES FOR QUICK ELEMENT NO. 23 MATERIAL = 2

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

[illegible]

DISPLACEMENTS FOR BRICK ELEMENT NO. 22 MATERIAL = 2

[illegible]

STRESSES FOR BRICK ELEMENT NO. 22 MATERIAL = 2

[illegible]

[illegible]

STRESSES FOR QUICK ELEMENT NO. 23 MATERIAL = 2

POINT	X	Y	Z	SIGMA EPX	SIGMA EPY	TAU1 GAMMA	TAU2 GAMMA	TAU3 GAMMA	SIGMA EP3	SIGMA EP2	SIGMA EP1	TAU4 GAMMA	SIGMA EP4	TAU5 GAMMA	SIGMA EP5	TAU6 GAMMA	SIGMA EP6	TAU7 GAMMA	SIGMA EP7	TAU8 GAMMA	SIGMA EP8	TAU9 GAMMA	SIGMA EP9	TAU10 GAMMA	SIGMA EP10	TAU11 GAMMA	SIGMA EP11	TAU12 GAMMA	SIGMA EP12	TAU13 GAMMA	SIGMA EP13	TAU14 GAMMA	SIGMA EP14	TAU15 GAMMA	SIGMA EP15	TAU16 GAMMA	SIGMA EP16	TAU17 GAMMA	SIGMA EP17	TAU18 GAMMA	SIGMA EP18	TAU19 GAMMA	SIGMA EP19	TAU20 GAMMA	SIGMA EP20	TAU21 GAMMA	SIGMA EP21	TAU22 GAMMA	SIGMA EP22	TAU23 GAMMA	SIGMA EP23	TAU24 GAMMA	SIGMA EP24	TAU25 GAMMA	SIGMA EP25	TAU26 GAMMA	SIGMA EP26	TAU27 GAMMA	SIGMA EP27	TAU28 GAMMA	SIGMA EP28	TAU29 GAMMA	SIGMA EP29	TAU30 GAMMA	SIGMA EP30	TAU31 GAMMA	SIGMA EP31	TAU32 GAMMA	SIGMA EP32	TAU33 GAMMA	SIGMA EP33	TAU34 GAMMA	SIGMA EP34	TAU35 GAMMA	SIGMA EP35	TAU36 GAMMA	SIGMA EP36	TAU37 GAMMA	SIGMA EP37	TAU38 GAMMA	SIGMA EP38	TAU39 GAMMA	SIGMA EP39	TAU40 GAMMA	SIGMA EP40	TAU41 GAMMA	SIGMA EP41	TAU42 GAMMA	SIGMA EP42	TAU43 GAMMA	SIGMA EP43	TAU44 GAMMA	SIGMA EP44	TAU45 GAMMA	SIGMA EP45	TAU46 GAMMA	SIGMA EP46	TAU47 GAMMA	SIGMA EP47	TAU48 GAMMA	SIGMA EP48	TAU49 GAMMA	SIGMA EP49	TAU50 GAMMA	SIGMA EP50	TAU51 GAMMA	SIGMA EP51	TAU52 GAMMA	SIGMA EP52	TAU53 GAMMA	SIGMA EP53	TAU54 GAMMA	SIGMA EP54	TAU55 GAMMA	SIGMA EP55	TAU56 GAMMA	SIGMA EP56	TAU57 GAMMA	SIGMA EP57	TAU58 GAMMA	SIGMA EP58	TAU59 GAMMA	SIGMA EP59	TAU60 GAMMA	SIGMA EP60	TAU61 GAMMA	SIGMA EP61	TAU62 GAMMA	SIGMA EP62	TAU63 GAMMA	SIGMA EP63	TAU64 GAMMA	SIGMA EP64	TAU65 GAMMA	SIGMA EP65	TAU66 GAMMA	SIGMA EP66	TAU67 GAMMA	SIGMA EP67	TAU68 GAMMA	SIGMA EP68	TAU69 GAMMA	SIGMA EP69	TAU70 GAMMA	SIGMA EP70	TAU71 GAMMA	SIGMA EP71	TAU72 GAMMA	SIGMA EP72	TAU73 GAMMA	SIGMA EP73	TAU74 GAMMA	SIGMA EP74	TAU75 GAMMA	SIGMA EP75	TAU76 GAMMA	SIGMA EP76	TAU77 GAMMA	SIGMA EP77	TAU78 GAMMA	SIGMA EP78	TAU79 GAMMA	SIGMA EP79	TAU80 GAMMA	SIGMA EP80	TAU81 GAMMA	SIGMA EP81	TAU82 GAMMA	SIGMA EP82	TAU83 GAMMA	SIGMA EP83	TAU84 GAMMA	SIGMA EP84	TAU85 GAMMA	SIGMA EP85	TAU86 GAMMA	SIGMA EP86	TAU87 GAMMA	SIGMA EP87	TAU88 GAMMA	SIGMA EP88	TAU89 GAMMA	SIGMA EP89	TAU90 GAMMA	SIGMA EP90	TAU91 GAMMA	SIGMA EP91	TAU92 GAMMA	SIGMA EP92	TAU93 GAMMA	SIGMA EP93	TAU94 GAMMA	SIGMA EP94	TAU95 GAMMA	SIGMA EP95	TAU96 GAMMA	SIGMA EP96	TAU97 GAMMA	SIGMA EP97	TAU98 GAMMA	SIGMA EP98	TAU99 GAMMA	SIGMA EP99	TAU100 GAMMA	SIGMA EP100	TAU101 GAMMA	SIGMA EP101	TAU102 GAMMA	SIGMA EP102	TAU103 GAMMA	SIGMA EP103	TAU104 GAMMA	SIGMA EP104	TAU105 GAMMA	SIGMA EP105	TAU106 GAMMA	SIGMA EP106	TAU107 GAMMA	SIGMA EP107	TAU108 GAMMA	SIGMA EP108	TAU109 GAMMA	SIGMA EP109	TAU110 GAMMA	SIGMA EP110	TAU111 GAMMA	SIGMA EP111	TAU112 GAMMA	SIGMA EP112	TAU113 GAMMA	SIGMA EP113	TAU114 GAMMA	SIGMA EP114	TAU115 GAMMA	SIGMA EP115	TAU116 GAMMA	SIGMA EP116	TAU117 GAMMA	SIGMA EP117	TAU118 GAMMA	SIGMA EP118	TAU119 GAMMA	SIGMA EP119	TAU120 GAMMA	SIGMA EP120	TAU121 GAMMA	SIGMA EP121	TAU122 GAMMA	SIGMA EP122	TAU123 GAMMA	SIGMA EP123	TAU124 GAMMA	SIGMA EP124	TAU125 GAMMA	SIGMA EP125	TAU126 GAMMA	SIGMA EP126	TAU127 GAMMA	SIGMA EP127	TAU128 GAMMA	SIGMA EP128	TAU129 GAMMA	SIGMA EP129	TAU130 GAMMA	SIGMA EP130	TAU131 GAMMA	SIGMA EP131	TAU132 GAMMA	SIGMA EP132	TAU133 GAMMA	SIGMA EP133	TAU134 GAMMA	SIGMA EP134	TAU135 GAMMA	SIGMA EP135	TAU136 GAMMA	SIGMA EP136	TAU137 GAMMA	SIGMA EP137	TAU138 GAMMA	SIGMA EP138	TAU139 GAMMA	SIGMA EP139	TAU140 GAMMA	SIGMA EP140	TAU141 GAMMA	SIGMA EP141	TAU142 GAMMA	SIGMA EP142	TAU143 GAMMA	SIGMA EP143	TAU144 GAMMA	SIGMA EP144	TAU145 GAMMA	SIGMA EP145	TAU146 GAMMA	SIGMA EP146	TAU147 GAMMA	SIGMA EP147	TAU148 GAMMA	SIGMA EP148	TAU149 GAMMA	SIGMA EP149	TAU150 GAMMA	SIGMA EP150	TAU151 GAMMA	SIGMA EP151	TAU152 GAMMA	SIGMA EP152
-------	---	---	---	--------------	--------------	---------------	---------------	---------------	--------------	--------------	--------------	---------------	--------------	---------------	--------------	---------------	--------------	---------------	--------------	---------------	--------------	---------------	--------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	----------------	---------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------	-----------------	----------------

DISPLACEMENTS FOR BRICK ELEMENT NO. 24 MATERIAL = 2

I	J	K	U	V	W
5	3	7	.3624E-02	.1830E-02	0.
7	5	7	.3496E-02	.1707E-02	0.
5	5	7	.3521E-02	.1201E-02	0.
5	3	9	.3140E-02	.1194E-02	0.
7	3	9	.3165E-02	.1530E-02	0.
7	3	9	.3220E-02	.1351E-02	0.
9	3	9	.3241E-02	.1303E-02	0.
6	3	7	.3633E-02	.1760E-02	0.
7	4	7	.3505E-02	.2723E-02	0.
6	5	7	.3825E-02	.2792E-02	0.
5	3	8	.3529E-02	.1194E-02	0.
7	3	8	.3474E-02	.1677E-02	0.
7	5	8	.3466E-02	.1298E-02	0.
5	5	8	.3400E-02	.1356E-02	0.
6	3	3	.3154E-02	.1597E-02	0.
7	4	9	.3472E-02	.1717E-02	0.
6	5	9	.3232E-02	.1455E-02	0.
5	4	9	.3455E-02	.1530E-02	0.

STRESSES FOR BRICK ELEMENT NO. 24 MATERIAL = 2

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TAUXY GAMMAX EPSX	TAUYZ GAMMAX EPSY	TAUZX GAMMAX EPSZ	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
200	.23E+01	.94E+00	.19E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
209	.23E+01	.96E+00	.19E+01	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05
210	.18E+01	.18E+01	.19E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
211	.17E+01	.17E+01	.19E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
212	.23E+01	.94E+00	.24E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
213	.23E+01	.96E+00	.24E+01	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05	.12E+05
214	.18E+01	.18E+01	.24E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
215	.17E+01	.17E+01	.24E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04
216	.21E+01	.14E+01	.22E+01	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04	.69E+04

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS

FIRST			SECOND			THIRD		
ELEMENT	POINT	STRESS	ELEMENT	POINT	STRESS	ELEMENT	POINT	STRESS
I	J	K	I	J	K	I	J	K

MATERIAL NUMBER = 1															
SIGMA MAX	1	1	1	4	-0.837E+03	1	1	1	1	-0.841E+03	1	3	1	10	-0.841E+03
SIGMA MIN	3	1	1	20	-0.169E+04	3	1	1	21	-0.168E+04	3	3	1	29	-0.168E+04
TAU MAX	1	1	5	73	0.276E+03	1	1	3	41	0.276E+03	1	1	3	37	0.275E+03
EPS MAX	1	1	1	4	0.234E-01	1	1	1	5	0.231E-01	1	3	1	18	0.281E-01
EPS MIN	1	1	5	73	-0.292E-01	1	1	3	41	-0.292E-01	1	1	5	77	-0.292E-01
GAMMA MAX	1	1	5	73	0.336E-01	1	1	3	41	0.335E-01	1	1	3	87	0.336E-01
MATERIAL NUMBER = 2															
SIGMA MAX	5	3	7	209	0.551E+05	5	3	7	210	0.547E+05	5	3	1	155	0.583E+05
SIGMA MIN	5	1	7	203	-0.142E+05	5	1	7	206	-0.127E+05	5	1	7	199	-0.124E+05
TAU MAX	5	3	1	154	0.290E+05	5	3	1	157	0.289E+05	5	3	7	200	0.285E+05
EPS MAX	5	3	1	156	0.178E-02	5	3	7	210	0.177E-02	5	3	5	156	0.177E-02
EPS MIN	5	1	7	203	-0.832E-03	5	1	7	199	-0.803E-03	5	3	7	212	-0.787E-03
GAMMA MAX	5	3	1	154	0.252E-02	5	3	1	157	0.251E-02	5	3	7	200	0.247E-02

TIME IN SECS = 3.897 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT = 5														
MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE
1	30101	0	0	0.948E+00	0	0	11	30302	0	0	0.921E+00	0	0	11
2	30103	0	0	0.159E+01	0	0	12	30201	0	0	0.921E+00	0	0	12
3	30303	0	0	0.156E+01	0	0	13	40101	0	0	0.120E+01	0	0	13
4	30301	0	0	0.948E+00	0	0	14	40103	0	0	0.120E+01	0	0	14
5	50101	0	0	0.154E+01	0	0	15	40303	0	0	0.155E+01	0	0	15
6	50103	0	0	0.156E+01	0	0	16	40201	0	0	0.120E+01	0	0	16
7	51303	0	0	0.172E+01	0	0	17	50102	0	0	0.177E+01	0	0	17
8	50301	0	0	0.156E+01	0	0	18	50203	0	0	0.192E+01	0	0	18
9	30102	0	0	0.112E+01	0	0	19	50302	0	0	0.143E+01	0	0	19
10	30203	0	0	0.159E+01	0	0	20	50201	0	0	0.140E+01	0	0	20

FINE GRID ELEMENT = 1														
MODE	I	J	K	X-COORD	Y-COORD	Z-COORD	MODE	I	J	K	X-COORD	Y-COORD	Z-COORD	MODE
1	1	1	1	0.948E+00	0	0	1	1	1	1	0.921E+00	0	0	1

POINT, CLAMP, AND SLOPE TYPE BC.

FINE GRID ELEMENT = 3

58

J	A	J	Q	VALUE	VALUE	VALUE	AD	J	Q	Q	VALUE	VALUE	VALUE
6	3	3	5	.145E+01	.281E+01	.845E+00	16	1	5	4	.126E+01	.395E+00	.855E+00
7	3	5	5	.132E+01	.500E+00	.841E+00	17	2	3	5	.129E+01	.267E+00	.847E+00
8	1	5	5	.995E+00	.352E+00	.844E+00	18	3	4	5	.140E+01	.390E+00	.843E+00
9	2	3	3	.111E+01	.221E+00	.463E+00	19	2	5	5	.116E+01	.426E+00	.862E+00
10	3	4	3	.120E+01	.306E+00	.463E+00	20	1	4	5	.107E+01	.292E+00	.866E+00

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	4	.1411E-01
2	4	.7230E-02
3	4	-.2851E-01
1	1	.1473E-01
2	1	.3947E-02
3	1	-.2136E-01
1	5	.9240E-02
2	5	.3980E-02
3	5	-.1756E-01
1	8	.9629E-02
2	8	.7339E-02
3	8	-.1701E-01
1	12	.1444E-01
2	12	.5671E-02
3	12	-.2096E-01
1	13	.1172E-01
2	13	.3892E-02
3	13	-.1959E-01
1	20	.9397E-02
2	20	.5683E-02
3	20	-.1729E-01
1	16	.1160E-01
2	16	.7214E-02
3	16	-.1887E-01
1	3	.8976E-02
2	3	.3970E-02
3	3	-.1510E-01
1	7	.7101E-02
2	7	.3642E-02
3	7	-.1363E-01
1	11	.1124E-01
2	11	.5349E-02
3	11	-.1780E-01
1	19	.8272E-02
2	19	.5198E-02
3	19	-.1512E-01
1	15	.7924E-02
2	15	.3734E-02
3	15	-.1411E-01
1	2	.9279E-02
2	2	.2137E-02
3	2	-.1511E-01
1	10	.9133E-02
2	10	.3895E-02
3	10	-.1508E-01
1	9	.1170E-01
2	9	.2914E-02
3	9	-.1815E-01

FINE GRID ELEMENT = 4

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	1	3	5	.113E+01	.213E+00	.849E+00	11	2	5	5	.116E+01	.426E+00	.842E+00
2	3	3	5	.146E+01	.281E+00	.845E+00	12	1	4	5	.107E+01	.292E+00	.866E+00
3	3	5	5	.132E+01	.500E+00	.841E+00	13	1	3	6	.126E+01	.229E+00	.103E+01
4	1	5	5	.995E+00	.352E+00	.844E+00	14	3	3	6	.155E+01	.291E+00	.103E+01
5	1	3	7	.140E+01	.244E+00	.120E+01	15	3	5	6	.137E+01	.495E+00	.102E+01
6	3	3	7	.166E+01	.302E+00	.120E+01	16	1	5	6	.107E+01	.348E+00	.103E+01

1	1	5	7	.116E+01	.345E+00	.120E+01	18	3	4	7	.156E+01	.410E+00	.120E+01	9	2	3	5	.129E+01	.247E+00	.847E+00	19	2	5	7	.130E+01	.416E+00	.120E+01	10	3	4	5	.140E+01	.390E+00	.843E+00	20	1	4	7	.129E+01	.312E+00	.120E+01
---	---	---	---	----------	----------	----------	----	---	---	---	----------	----------	----------	---	---	---	---	----------	----------	----------	----	---	---	---	----------	----------	----------	----	---	---	---	----------	----------	----------	----	---	---	---	----------	----------	----------

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	4	.9629E-02
2	4	.7339E-02
3	4	-.1701E-01
1	1	.9240E-02
2	1	.3900E-02
3	1	-.1796E-01
1	5	.5075E-02
2	5	.4190E-01
3	5	-.1270E-01
1	8	.0022E-02
2	8	.0009E-02
3	8	-.1267E-01
1	12	.9397E-02
2	12	.5083E-02
3	12	-.1729E-01
1	13	.7292E-02
2	13	.3994E-02
3	13	-.1926E-01
1	20	.6193E-02
2	20	.6116E-02
3	20	-.1267E-01
1	10	.7941E-02
2	16	.7604E-02
3	16	-.1494E-01
1	3	.7101E-02
2	3	.3042E-02
3	3	-.1303E-01
1	7	.6149E-02
2	7	.3939E-02
3	7	-.1062E-01
1	11	.0272E-02
2	11	.5190E-02
3	11	-.1512E-01
1	19	.0497E-02
2	19	.5644E-02
3	19	-.1185E-01
1	15	.6500E-02
2	15	.3711E-02
3	15	-.1187E-01
1	6	.4002E-02
2	6	.1813E-02
3	6	-.0925E-02
1	18	.5440E-02
2	18	.2037E-02
3	18	-.9703E-02
1	17	.5370E-02
2	17	.2016E-02
3	17	-.1077E-01

FINE GRID ELEMENT = 5													
NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	1	3	.132E+01	0.	.463E+00	11	4	3	3	.159E+01	.290E+00	.463E+00
2	5	1	3	.169E+01	0.	.463E+00	12	3	2	3	.132E+01	.131E+00	.463E+00
3	5	3	3	.169E+01	.336E+00	.463E+00	13	3	1	4	.141E+01	0.	.600E+00
4	3	3	3	.131E+01	.260E+00	.463E+00	14	5	1	4	.175E+01	0.	.656E+00
5	3	1	5	.151E+01	0.	.849E+00	15	5	3	4	.173E+01	.343E+00	.654E+00
6	5	1	5	.102E+01	0.	.844E+00	16	3	3	4	.139E+01	.270E+00	.697E+00
7	5	3	5	.179E+01	.350E+00	.841E+00	17	4	1	5	.167E+01	0.	.846E+00
8	3	3	5	.146E+01	.281E+00	.845E+00	18	5	2	5	.182E+01	.181E+00	.842E+00

7	4	3	2	1	0	10	5	2	3	170E+01	.169E+00	.463E+00	20	3	2	9	157E+01	.148E+00	.847E+00
---	---	---	---	---	---	----	---	---	---	---------	----------	----------	----	---	---	---	---------	----------	----------

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	MODE	VALUE
1	2	.6440E-02
2	2	.3810E-03
3	2	-.9970E-02
1	3	.6290E-02
2	3	.1340E-02
3	3	-.9613E-02
1	7	.4701E-02
2	7	.8965E-03
3	7	-.7363E-02
1	6	.4497E-02
2	6	-.1897E-00
3	6	-.7208E-02
1	10	.6350E-02
2	10	.6653E-03
3	10	-.9734E-02
1	15	.5461E-02
2	15	.1077E-02
3	15	-.8444E-00
1	18	.4607E-02
2	18	.3855E-03
3	18	-.7195E-02
1	14	.5356E-02
2	14	-.7236E-09
3	14	-.8521E-02
1	1	.9539E-02
2	1	-.1642E-00
3	1	-.1E30E-01
1	5	.6966E-02
2	5	-.2135E-00
3	5	-.1171E-01
1	9	.7670E-02
2	9	-.6948E-09
3	9	-.1246E-01
1	17	.9010E-02
2	17	-.1805E-00
3	17	-.9225E-02
1	13	.7517E-02
2	13	-.1936E-06
3	13	-.1355E-01
1	4	.9279E-02
2	4	.2137E-02
3	4	-.1511E-01
1	12	.9414E-02
2	12	.1106E-02
3	12	-.1518E-01
1	11	.7479E-02
2	11	-.1615E-02
3	11	-.1227E-01

FINE GRID ELEMENT = 6

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	1	5	.151E+01	0.	.849E+00	11	4	3	5	.162E+01	.315E+00	.963E+00
2	5	1	5	.182E+01	0.	.844E+00	12	3	2	5	.157E+01	.148E+00	.967E+00
3	5	3	5	.179E+01	.350E+00	.841E+00	13	2	4	6	.163E+01	0.	.193E+01
4	3	3	5	.146E+01	.281E+00	.845E+00	14	5	1	6	.190E+01	0.	.103E+01
5	3	1	7	.177E+01	0.	.120E+01	15	5	3	6	.185E+01	.357E+00	.182E+01
6	5	1	7	.199E+01	0.	.120E+01	16	3	3	6	.155E+01	.291E+00	.183E+01
7	5	3	7	.192E+01	.363E+00	.120E+01	17	4	1	7	.188E+01	0.	.129E+01
8	3	3	7	.166E+01	.392E+00	.120E+01	18	5	2	7	.197E+01	.192E+00	.120E+01
9	4	1	5	.167E+01	0.	.846E+00	19	4	3	7	.179E+01	.332E+00	.120E+01
10	5	2	5	.182E+01	.181E+00	.842E+00	20	3	2	7	.173E+01	.165E+00	.120E+01

POINT, CLAMP, AND SLOPE TYPE BC.

POINT TYPE	CLAMP MODE	SLOPE VALUE	TYPE BC.
1	2	.4497E-02	
2	2	-.1097E-00	
3	2	-.7200E-02	
1	3	.4701E-02	
2	3	.0905E-03	
3	3	-.7363E-02	
1	7	.3095E-02	
2	7	.7938E-03	
3	7	-.5469E-02	
1	6	.3040E-02	
2	6	.2910E-09	
3	6	-.5014E-02	
1	10	.4607E-02	
2	10	.3055E-03	
3	10	-.7195E-02	
1	15	.4259E-02	
2	15	.0000E-03	
3	15	-.6372E-02	
1	18	.3619E-02	
2	18	.2022E-03	
3	18	-.5122E-02	
1	14	.3061E-02	
2	14	-.7509E-09	
3	14	-.6030E-02	
1	1	.5956E-02	
2	1	-.2139E-00	
3	1	-.1171E-01	
1	5	.4214E-02	
2	5	-.4505E-09	
3	5	-.7700E-02	
1	9	.5010E-02	
2	9	-.1005E-00	
3	9	-.9225E-02	
1	17	.3717E-02	
2	17	-.2622E-09	
3	17	-.6105E-02	
1	13	.4055E-02	
2	13	-.1040E-00	
3	13	-.9796E-02	
1	8	.4002E-02	
2	8	.1013E-02	
3	8	-.0925E-02	
1	19	.4300E-02	
2	19	.1130E-02	
3	19	-.7157E-02	
1	20	.4474E-02	
2	20	.0672E-03	
3	20	-.0204E-02	

FINE GRID ELEMENT = 7

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	3	3	.131E+01	.260E+00	.463E+00	11	4	5	3	.142E+01	.507E+00	.463E+00
2	3	3	3	.169E+01	.336E+00	.463E+00	12	3	4	3	.120E+01	.306E+00	.463E+00
3	5	5	3	.160E+01	.663E+00	.463E+00	13	3	3	4	.130E+01	.270E+00	.657E+00
4	3	5	3	.123E+01	.511E+00	.463E+00	14	5	3	4	.173E+01	.343E+00	.654E+00
5	3	3	5	.146E+01	.201E+00	.045E+00	15	5	5	4	.162E+01	.657E+00	.652E+00
6	5	3	5	.179E+01	.350E+00	.041E+00	16	3	5	4	.127E+01	.506E+00	.654E+00
7	5	5	5	.165E+01	.652E+00	.030E+00	17	4	3	5	.162E+01	.315E+00	.043E+00
8	3	5	5	.132E+01	.500E+00	.041E+00	18	5	4	5	.173E+01	.507E+00	.040E+00
9	4	3	3	.150E+01	.290E+00	.463E+00	19	4	5	5	.140E+01	.576E+00	.040E+00
10	5	4	3	.166E+01	.500E+00	.463E+00	20	3	4	5	.140E+01	.390E+00	.043E+00

POINT, CLAMP, AND SLOPE TYPE BC.

POINT CLAMP SLOPE TYPE BC.

TYPE	NODE	VALUE
1	2	.6298E-02
2	2	.1340E-02
3	2	-.9613E-02
1	3	.6244E-02
2	3	.2767E-02
3	3	-.9749E-02
1	7	.5320E-02
2	7	.2203E-02
3	7	-.8244E-02
1	6	.4701E-02
2	6	.8945E-03
3	6	-.7363E-02
1	10	.6260E-02
2	10	.2849E-02
3	10	-.9617E-02
1	15	.9730E-02
2	15	.2437E-02
3	15	-.8978E-02
1	18	.5819E-02
2	18	.1527E-02
3	18	-.7713E-02
1	14	.5461E-02
2	14	.1877E-02
3	14	-.8444E-02
1	4	.897E-02
2	4	.3978E-02
3	4	-.1510E-01
1	8	.7101E-02
2	8	.3642E-02
3	8	-.1303E-01
1	11	.7310E-02
2	11	.3118E-02
3	11	-.1241E-01
1	16	.7924E-02
2	16	.3731E-02
3	16	-.1411E-01
1	19	.6117E-02
2	19	.2678E-02
3	19	-.1074E-01
1	1	.9279E-02
2	1	.2137E-02
3	1	-.1511E-01
1	12	.9133E-02
2	12	.3895E-02
3	12	-.1508E-01
1	9	.7479E-02
2	9	.1615E-02
3	9	-.1227E-01

FINE GRID ELEMENT # 8											
NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD
1	3	3	5	.146E+01	.241E+00	.845E+00	11	4	5	5	.144E+01
2	5	3	5	.179E+01	.350E+00	.841E+00	12	3	4	5	.144E+01
3	5	5	5	.165E+01	.652E+00	.838E+00	13	3	3	6	.155E+01
4	3	5	5	.132E+01	.500E+00	.841E+00	14	5	3	6	.185E+01
5	3	3	7	.166E+01	.302E+00	.120E+01	15	5	5	6	.168E+01
6	5	3	7	.192E+01	.363E+00	.120E+01	16	3	5	6	.137E+01
7	5	5	7	.172E+01	.640E+00	.120E+01	17	4	3	7	.179E+01
8	3	5	7	.143E+01	.489E+00	.120E+01	18	5	4	7	.183E+01
9	4	3	5	.162E+01	.315E+00	.843E+00	19	4	5	7	.157E+01
10	5	4	5	.173E+01	.507E+00	.84CE+00	20	3	4	7	.156E+01
											Y-COORD
											Z-COORD

POINT, CLAMP, AND SLOPE TYPE 00.		
TYPE	NODE	VALUE
1	2	.4701E-02
2	2	-.9749E-02

1	1	.0000E-00
1	2	-.7363E-02
1	3	.5320E-02
2	3	.2203E-02
3	3	-.0244E-02
1	7	.4763E-02
2	7	.2895E-02
3	7	-.6070E-02
1	6	.3099E-02
2	6	.7030E-03
3	6	.5409E-02
1	10	.5019E-02
2	10	.1927E-02
3	10	-.7713E-02
1	15	.4995E-02
2	15	.2306E-02
3	15	-.7944E-02
1	10	.4276E-02
2	10	.1939E-02
3	10	-.6054E-02
1	14	.4259E-02
2	14	.0000E-03
3	14	-.6372E-02
1	4	.7401E-02
2	4	.3642E-02
3	4	-.1303E-01
1	8	.6145E-02
2	8	.3939E-02
3	8	-.1902E-01
1	11	.6417E-02
2	11	.2670E-02
3	11	-.1074E-01
1	16	.6500E-02
2	16	.3711E-02
3	16	-.1107E-01
1	19	.5567E-02
2	19	.2093E-02
3	19	-.0959E-02
1	5	.4002E-02
2	5	.1013E-02
3	5	-.0922E-02
1	20	.5440E-02
2	20	.2037E-02
3	20	-.9703E-02
1	17	.4300E-02
2	17	.1130E-02
3	17	-.7197E-02

TIME IN REZONE = 1.261 SECONDS

TIME IN FORMKF = 3.690 SECONDS

TIME IN PREFRONT = .309

TOTAL NUMBER OF D.O.F.'S = 270

D.O.F. IN FRONT = 112

MAXIMUM ACTIVE STORAGE = 0900

TOTAL NICKNAME STORAGE = 224

BUFFER LENGTH = 10033

TIME IN FORWARD ELIMINATION = 7.523

NUMBER OF RECORDS/BUCKET = 100

NUMBER OF SECTORS/PAUSE - 404

TIME IN BACKSUBSTITUTION = .659

TIME IN ZIPP * 8.494 SECONDS

BLOCK OPTION

ROUNDS

	MIN	MAX	MIN	MAX
X	-1.000E+21	.1000E+21	I	0 0
Y	-1.000E+21	.1000E+21	J	0 0
Z	-1.000E+21	.1000E+21	K	0 0

PRINT LEVEL = 4

STRESS POINTS FOR BRICK(DEGEN) ELEMENTS

POINT	S1	S2	S3
1	-1.000	-1.000	-1.000
2	1.000	-1.000	-1.000
3	1.000	1.000	-1.000
4	-1.000	1.000	-1.000
5	-1.000	-1.000	1.000
6	1.000	-1.000	1.000
7	1.000	1.000	1.000
8	-1.000	1.000	1.000
9	0.000	0.000	0.000

STRESS POINTS FOR PRISM ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	-1.000
2	0.000	1.000	0.000	-1.000
3	0.000	0.000	1.000	-1.000
4	1.000	0.000	1.000	1.000
5	0.000	1.000	0.000	1.000
6	0.000	0.000	1.000	1.000
7	.333	.333	.333	0.000

STRESS POINTS FOR WEDGE ELEMENTS

POINT	S1	S2	S3
1	.050	0.000	-1.000
2	1.000	0.000	-1.000
3	1.000	1.000	-1.000
4	.050	0.000	1.000
5	1.000	0.000	1.000
6	1.000	1.000	1.000
7	.667	.500	0.000

STRESS POINTS FOR TETRA ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	0.000
2	0.000	1.000	0.000	0.000
3	0.000	0.000	1.000	0.000
4	0.000	0.000	0.000	1.000
5	.250	.250	.250	.250

STRESSES FOR BRICK ELEMENT NO. 1 MATERIAL = 1

[illegible]

DISPLACEMENTS FOR BRICK ELEMENT NO. 2 MATERIAL = 1

I	J	K	U	V	M	M
1	1	5	.915E-02	-.102E-00	-.101E-01	.150E+01
3	1	2	.593E-02	-.213E-00	-.117E-01	.210E+00
3	1	2	.648E-02	-.131E-02	-.119E-01	.217E+00
1	3	7	.924E-02	.340E-02	-.175E-01	-.125E+01
1	1	7	.594E-02	-.260E-02	-.178E-01	-.364E+01
3	1	7	.421E-02	-.430E-02	-.182E-02	-.664E+00
3	1	7	.488E-02	-.183E-02	-.182E-02	-.208E+00
1	3	7	.597E-02	-.415E-02	-.127E-01	.240E+01
2	1	5	.733E-02	-.104E-00	-.146E-01	
3	2	5	.662E-02	.941E-03	-.131E-01	
2	3	5	.672E-02	.272E-02	-.146E-01	
1	2	5	.915E-02	.281E-02	-.178E-01	
1	1	6	.717E-02	-.718E-09	-.156E-01	
3	1	6	.485E-02	-.168E-00	-.597E-02	
3	3	6	.572E-02	.909E-03	-.596E-02	
1	3	6	.729E-02	.399E-02	-.152E-01	
2	1	7	.694E-02	-.278E-09	-.100E-01	
3	2	7	.647E-02	.667E-03	-.829E-02	
2	3	7	.537E-02	.281E-02	-.107E-01	
1	2	7	.579E-02	.1211E-02	-.127E-01	

STRESSES FOR BRICK ELEMENT NO. 2 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMY EPSY	SIGMAZ EPSZ	TAUXY GAMMAX	TAUYZ GAMMAX	TAUZX GAMMAX	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
10	.12E+01	0.	.05E+00	.94E+04	.97E+04	.94E+04	-.14E+02	.35E+02	.14E+03	.97E+04	.95E+04	.92E+04	.24E+03
11	.15E+01	0.	.05E+00	-.13E-01	.17E-01	-.67E-02	-.22E-02	.55E-02	.21E-01	.17E-01	.12E-02	-.21E-01	.30E-01
12	.15E+01	.20E+00	.04E+00	.13E+04	.15E+04	.14E+04	.82E+02	-.11E+03	.94E+02	.15E+04	.14E+04	.12E+04	.17E+03
13	.11E+01	.21E+00	.05E+00	.15E+04	.14E+04	.15E+04	.67E-02	-.17E-01	.15E-01	.13E+01	.14E-02	-.15E-01	.27E-01
14	.15E+01	0.	.12E+01	.50E-02	.19E-03	.66E-02	-.10E-01	.20E-01	.47E-02	.14E-01	.76E-02	-.92E-02	.23E-01
15	.19E+01	0.	.12E+01	.82E+04	.78E+04	.80E+04	.13E+03	.12E+03	.11E+03	.77E+04	.79E+04	.83E+04	.30E+03
16	.17E+01	.30E+00	.12E+01	-.23E+05	-.23E+05	-.23E+05	-.23E+05	.57E+02	.21E+03	-.23E+05	-.23E+05	-.23E+05	.20E+03
17	.14E+01	.24E+00	.12E+01	.95E-02	.14E-01	.14E-01	-.61E-02	.90E-02	.33E-01	.14E-01	.65E-02	-.29E-01	.64E-01
18	.15E+01	.14E+00	.10E+01	-.24E-02	.66E-02	.26E-02	.14E+03	.83E+03	.20E-01	.59E-02	.66E-02	-.14E-01	.20E-01
				-.14E+04	-.13E+04	-.14E+04	-.99E+02	.11E+03	.67E+02	-.13E+04	-.13E+04	-.13E+04	.14E+03
				.11E-02	.31E-02	.52E-02	-.61E-02	.17E-01	.11E-01	.06E-02	-.65E-03	-.14E-01	.23E-01
				.16E+05	.16E+05	.16E+05	-.90E+02	.17E+03	.57E+02	.16E+05	.16E+05	.16E+05	.22E+03
				-.36E-02	.01E-02	.36E-02	-.10E-01	.27E-01	.09E-02	.28E-01	.27E-02	-.14E-01	.34E-01
				-.90E+03	-.02E+03	-.98E+03	-.69E+02	.61E+02	.97E+02	-.79E+03	-.05E+03	-.11E+04	.16E+03
				-.50E-02	.70E-02	.01E-03	-.70E-02	.97E-02	.15E-01	.97E-02	.50E-02	-.13E-01	.22E-01

DISPLACEMENTS FOR BRICK ELEMENT NO. 3 MATERIAL = 1

STRESSES FOR BRICK ELEMENT NO. 3 MATERIAL = 1

DISPLACEMENTS FOR BRICK ELEMENT NO. 4 MATERIAL = 1

I	J	K	U	V	A	M
1	3	5	.924E-02	.390E-02	-.175E-01	-.125E-01
2	3	5	.946E-02	.151E-02	-.115E-01	.517E-00
3	3	5	.718E-02	.842E-02	-.130E-01	.252E-00
1	3	5	.962E-02	.735E-02	-.178E-01	.520E-00
1	3	7	.587E-02	.415E-02	-.127E-01	.240E-01
3	3	7	.488E-02	.181E-02	-.092E-02	-.280E-00
3	5	7	.614E-02	.393E-02	-.186E-01	-.100E-01
1	3	7	.862E-02	.800E-02	-.125E-01	.750E-00
2	3	5	.672E-02	.272E-02	-.146E-01	
3	4	5	.671E-02	.220E-02	-.115E-01	
2	4	5	.827E-02	.519E-02	-.151E-01	
1	4	5	.937E-02	.568E-02	-.172E-01	
1	3	6	.729E-02	.399E-02	-.152E-01	
3	3	6	.372E-02	.909E-03	.998E-02	
3	5	6	.650E-02	.371E-02	-.118E-01	
1	3	6	.794E-02	.760E-02	-.149E-01	
2	3	7	.537E-02	.281E-02	-.187E-01	
3	4	7	.546E-02	.283E-02	-.187E-01	
2	5	7	.649E-02	.564E-02	-.118E-01	
1	4	7	.615E-02	.611E-02	-.126E-01	

STRESSES FOR BRICK ELEMENT NO. 4 MATERIAL = 1

POINT	X	Y	Z	SIGMA EPSX	SIGMA EPSY	SIGMA EPSZ	TAUX GAMMAX	TAUY GAMMAX	TAUZ GAMMAX	SIGMA EPS1	SIGMA EPS2	SIGMA EPS3	TAUMAX GAMMAX
28	.11E+01	.21E+00	.05E+00	-.82E-04	-.78E-04	-.80E-04	-.80E-04	-.80E-04	-.80E-04	-.77E-04	-.79E-04	-.79E-04	-.80E-04
29	.15E+01	.20E+00	.04E+00	-.80E-01	.15E-01	.15E-01	-.21E-01	.18E-01	.18E-01	.20E-01	.20E-01	.20E-01	.20E-01
30	.13E+01	.50E+00	.04E+00	.66E-02	.14E+04	.14E+04	.62E-03	.76E+02	.62E+02	.59E+04	.59E+04	.59E+04	.60E+04
31	.99E+00	.35E+00	.04E+00	-.61E-02	.03E-02	.03E-02	-.13E-01	-.13E-01	-.13E-01	.13E-01	.13E-01	.13E-01	.13E-01
32	.14E+01	.24E+00	.12E+01	-.64E-02	.38E-02	.38E-02	-.23E-01	.22E-01	.22E-01	.20E-01	.20E-01	.20E-01	.20E-01
33	.17E+01	.30E+00	.12E+01	-.36E-02	.01E-02	.01E-02	-.16E-01	.27E-01	.27E-01	.28E-01	.28E-01	.28E-01	.28E-01
34	.14E+01	.39E+00	.12E+01	-.11E-02	.31E-02	.31E-02	-.61E-02	.17E-01	.11E-01	.06E-02	.06E-02	.06E-02	.06E-02
35	.12E+01	.34E+00	.12E+01	-.66E-02	.15E-02	.15E-02	-.67E-02	.83E-02	.90E-02	.78E-02	.78E-02	.78E-02	.78E-02
36	.13E+01	.35E+00	.10E+01	-.23E-02	.12E-01	.12E-01	-.80E-02	.17E-01	.30E-02	.16E-01	.16E-01	.16E-01	.16E-01
				-.56E-02	.32E-02	.32E-02	-.12E-01	.17E-01	.11E-01	.11E-01	.11E-01	.11E-01	.11E-01

DISPLACEMENTS FOR BRICKM ELEMENT NO. 5 MATERIAL = 1

I	J	K	U	V	M	M
3	1	1	.9539E-02	-.1042E-08	-.1530E-01	-.1437E+01
3	1	2	.6446E-02	.3610E-09	-.9979E-02	.1820E+01
3	1	3	.6290E-02	.1340E-02	-.9513E-02	.2491E+00
3	3	1	.9279E-02	.2130E-02	-.1511E-01	.9537E+01
3	1	5	.5956E-02	-.2130E-08	-.1171E-01	.2160E+00
3	1	5	.4497E-02	-.1091E-08	-.7208E-02	.7170E+01
3	3	5	.4781E-02	.8945E-03	-.7353E-02	-.5364E+00
3	3	4	.6468E-02	.1910E-02	-.1192E-01	.2179E+00
4	1	3	.7670E-02	-.6940E-09	-.1246E-01	
4	2	3	.6350E-02	.6653E-03	-.9734E-02	
4	3	3	.7479E-02	.1615E-02	-.1277E-01	
4	3	3	.9414E-02	.1102E-02	-.1510E-01	
3	1	4	.7517E-02	-.1332E-08	-.1350E-01	
3	1	4	.5356E-02	-.7230E-09	-.8521E-02	
3	3	4	.5461E-02	.1077E-02	-.8444E-02	
3	3	4	.7009E-02	.2431E-02	-.1300E-01	
4	1	5	.5010E-02	-.1405E-09	-.2252E-02	
5	2	5	.4607E-02	.3855E-03	-.7195E-02	
4	3	5	.4961E-02	.1790E-02	-.1829E-01	
3	2	5	.6682E-02	.9419E-03	-.1333E-01	

STRESSES FOR BRICKM ELEMENT NO. 5 MATERIAL = 1

POINT	X	Y	Z	SIGMAX	EPGX	SIGMAY	EPGY	SIGMAZ	EPGZ	TAUXY	GAMMAX	TAUYZ	GAMMAX	TAUZX	GAMMAX	SIGMA1	EPG1	SIGMA2	EPG2	SIGMA3	EPG3	TAUMAX	GAMMAX
39	.13E+01	0.	.46E+00	-.92E+04	-.12E-01	.87E-02	.19E-02	-.91E+04	-.19E-02	-.11E-03	-.10E-03	-.65E+00	-.10E-03	.96E-02	.96E-02	-.90E+04	.87E-02	-.90E+04	.87E-02	-.93E+04	.87E-02	.22E+01	.22E+01
38	.17E+01	0.	.46E+00	-.11E+05	.11E+05	.12E+05	.12E+05	.12E+05	.12E+05	-.17E-01	.27E+01	.47E+02	.47E+02	.75E-02	.75E-02	.12E+05	.12E+05	.12E+05	.12E+05	.11E+05	.11E+05	.75E+02	.75E+02
39	.17E+01	.34E+00	.46E+00	-.15E+04	-.15E+04	.39E-02	.44E-02	.16E+04	.16E+04	-.28E-05	.43E-03	.46E+01	.46E+01	.50E-02	.50E-02	.16E+04	.16E+04	.16E+04	.16E+04	.16E+04	.16E+04	.77E+02	.77E+02
40	.13E+01	.26E+00	.46E+00	-.44E-02	-.44E-02	.40E-02	.34E-02	.34E-02	.34E-02	-.24E-02	.72E-03	.91E-02	.91E-02	.91E-02	.91E-02	.61E-02	.61E-02	.61E-02	.61E-02	.61E-02	.61E-02	.12E+01	.12E+01
41	.15E+01	0.	.05E+00	-.10E-01	.70E-02	.70E-02	.85E-02	.85E-02	.85E-02	-.76E-02	.05E-02	.11E-01	.11E-01	.11E-01	.11E-01	.12E-01	.12E-01	.12E-01	.12E-01	.13E-01	.13E-01	.25E+01	.25E+01
42	.10E+01	0.	.04E+00	-.75E-02	.72E-02	.72E-02	.51E-03	.51E-03	.51E-03	.67E-02	.17E-01	.15E-01	.15E-01	.15E-01	.15E-01	.13E-01	.13E-01	.13E-01	.13E-01	.13E-01	.13E-01	.27E+01	.27E+01
43	.10E+01	.35E+00	.04E+00	-.20E-02	.17E-02	.17E-02	.20E-02	.20E-02	.20E-02	.47E-03	.13E-03	.13E-03	.13E-03	.13E-03	.13E-03	.17E-02	.17E-02	.17E-02	.17E-02	.17E-02	.17E-02	.92E+02	.92E+02
44	.15E+01	.20E+00	.04E+00	.24E-02	.11E-02	.11E-02	.11E-02	.11E-02	.11E-02	-.34E+04	-.34E+04	-.34E+04	-.34E+04	-.34E+04	-.34E+04	.34E+04	.34E+04	.34E+04	.34E+04	.34E+04	.34E+04	.19E+01	.19E+01
45	.16E+01	.16E+00	.66E+00	-.11E-01	.46E-02	.46E-02	.56E-03	.56E-03	.56E-03	-.50E-02	.10E-01	.07E-04	.07E-04	.07E-04	.07E-04	.82E-02	.82E-02	.82E-02	.82E-02	.82E-02	.82E-02	.20E+01	.20E+01
				.47E+03	.63E+03	.63E+03	.55E+03	.55E+03	.55E+03	-.22E+02	.13E+02	.13E+02	.13E+02	.13E+02	.13E+02	.65E-02	.65E-02	.65E-02	.65E-02	.65E-02	.65E-02	.11E+03	.11E+03
				-.71E-02	.62E-02	.62E-02	.62E-02	.62E-02	.62E-02	-.35E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.20E-02	.17E+01	.17E+01

DISPLACEMENTS FOR BRICK ELEMENT NO. 6 MATERIAL = 1

I	J	K	U	V	W	H
3	1	5	.5956E-02	-.1171E-01	-.1171E-01	.2160E+00
3	1	5	.4897E-02	-.1897E-01	-.1897E-01	.2179E+01
5	3	5	.4781E-02	.6945E-03	-.7363E-02	-.5364E+00
3	3	5	.6468E-02	.1518E-02	-.1198E-01	.2179E+00
3	1	7	.4214E-02	-.4505E-09	-.7768E-02	-.6643E+00
5	1	7	.3448E-02	.2910E-09	-.5914E-02	.1807E+00
5	3	7	.3495E-02	.7938E-03	-.5469E-02	.6694E+00
3	3	7	.4897E-02	.1313E-02	-.9225E-02	-.2807E+00
4	1	5	.5818E-02	-.1885E-06	-.9225E-02	
5	1	5	.4897E-02	.3895E-03	-.7194E-02	
4	3	5	.4961E-02	.1793E-02	-.1829E-01	
3	3	5	.6628E-02	.9415E-03	-.1313E-01	
3	1	6	.4855E-02	-.1646E-06	-.9790E-02	
5	1	6	.3862E-02	-.7939E-09	-.6038E-02	
5	3	6	.4255E-02	.6000E-03	-.6372E-02	
3	3	6	.4728E-02	.9891E-03	-.9902E-02	
4	1	7	.3717E-02	-.2622E-09	-.6185E-02	
5	2	7	.3619E-02	.2822E-03	-.5122E-02	
4	3	7	.4388E-02	.1138E-02	-.7157E-02	
3	2	7	.4474E-02	.6072E-03	-.8294E-02	

STRESSES FOR BRICK ELEMENT NO. 6 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPST	SIGMAX EPSV	SIGMAZ EPSV	TAUXZ GAMMAX	TAUYZ GAMMAX	TAUXZ GAMMAX	SIGMA1 EPST	SIGMA2 EPST	SIGMA3 EPST	TAUMAX GAMMAX
46	.19E+01	0.	.09E+00	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
47	.18E+01	0.	.04E+00	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
48	.18E+01	.35E+00	.04E+00	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
49	.19E+01	.20E+00	.04E+00	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
50	.18E+01	0.	.12E+01	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
51	.20E+01	0.	.12E+01	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
52	.19E+01	.36E+00	.12E+01	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
53	.17E+01	.30E+00	.12E+01	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01
54	.17E+01	.17E+00	.10E+01	.13E+01	.12E+02	.12E+02	.11E+03	.11E+03	.11E+03	.13E+01	.14E+02	.12E+02	.17E+01

DISPLACEMENTS FOR BRICK ELEMENT NO. 7 MATERIAL = 1

I	J	K	U	V	M	M
1	3	3	3	3	3	3
2	3	3	3	3	3	3
3	3	3	3	3	3	3
4	3	3	3	3	3	3
5	3	3	3	3	3	3
6	3	3	3	3	3	3
7	3	3	3	3	3	3
8	3	3	3	3	3	3
9	3	3	3	3	3	3
10	3	3	3	3	3	3
11	3	3	3	3	3	3
12	3	3	3	3	3	3
13	3	3	3	3	3	3
14	3	3	3	3	3	3
15	3	3	3	3	3	3
16	3	3	3	3	3	3
17	3	3	3	3	3	3
18	3	3	3	3	3	3
19	3	3	3	3	3	3
20	3	3	3	3	3	3
21	3	3	3	3	3	3
22	3	3	3	3	3	3
23	3	3	3	3	3	3
24	3	3	3	3	3	3
25	3	3	3	3	3	3
26	3	3	3	3	3	3
27	3	3	3	3	3	3
28	3	3	3	3	3	3
29	3	3	3	3	3	3
30	3	3	3	3	3	3
31	3	3	3	3	3	3
32	3	3	3	3	3	3
33	3	3	3	3	3	3
34	3	3	3	3	3	3
35	3	3	3	3	3	3
36	3	3	3	3	3	3
37	3	3	3	3	3	3
38	3	3	3	3	3	3
39	3	3	3	3	3	3
40	3	3	3	3	3	3
41	3	3	3	3	3	3
42	3	3	3	3	3	3
43	3	3	3	3	3	3
44	3	3	3	3	3	3
45	3	3	3	3	3	3
46	3	3	3	3	3	3
47	3	3	3	3	3	3
48	3	3	3	3	3	3
49	3	3	3	3	3	3
50	3	3	3	3	3	3
51	3	3	3	3	3	3
52	3	3	3	3	3	3
53	3	3	3	3	3	3
54	3	3	3	3	3	3
55	3	3	3	3	3	3
56	3	3	3	3	3	3
57	3	3	3	3	3	3
58	3	3	3	3	3	3
59	3	3	3	3	3	3
60	3	3	3	3	3	3
61	3	3	3	3	3	3
62	3	3	3	3	3	3
63	3	3	3	3	3	3

STRESSES FOR BRICK ELEMENT NO. 7 MATERIAL = 1

POINT	X	Y	Z	SIGMAX	EPSX	SIGMAY	EPSY	SIGMAZ	EPSZ	TAUZY	GAMMAZY	TAUZX	GAMMAX	SIGMA1	EPS1	SIGMA2	EPS2	SIGMA3	EPS3	TAUMAX	GAMMAX
55	13E+01	26E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
56	17E+01	34E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
57	18E+01	66E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
58	12E+01	51E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
59	19E+01	20E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
60	18E+01	39E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
61	16E+01	65E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
62	13E+01	58E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02
63	15E+01	65E+00	46E+00	47E+03	69E+03	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02	70E+02

DISPLACEMENTS FOR BRICK ELEMENT NO. 8 MATERIAL = 1

STRESSES FOR BRICK ELEMENT NO. 5 MATERIAL = 1									
I	J	K	U	V	W	M	H	TAU1	T
POINT	X	Y	Z	EPX	EPY	EPZ	GAMMAX	GAMMAX	GAMMAX
64	19E+01	28E+00	84E+00	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
65	19E+01	39E+00	84E+00	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
66	19E+01	69E+00	84E+00	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
67	19E+01	99E+00	84E+00	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
68	19E+01	39E+00	12E+01	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
69	19E+01	36E+00	12E+01	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
70	19E+01	89E+00	12E+01	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
71	19E+01	89E+00	12E+01	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04
72	19E+01	89E+00	12E+01	14E+04	15E+04	15E+04	15E+04	15E+04	15E+04

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS
 FIRST SECOND THIRD
 ELEMENT POINT STRESS ELEMENT POINT STRESS ELEMENT POINT STRESS
 I J K NO. I J K NO. I J K NO.

MATERIAL NUMBER = 1

SIGMA MAX	1	1	5	17	.160E+05	1	3	5	32	.160E+05	3	1	2	36	.114E+05
SIGMA MIN	1	1	5	14	-.234E+05	3	1	3	37	-.926E+04	1	1	3	2	-.326E+04
TAU MAX	1	1	3	8	.303E+03	1	3	5	26	.303E+03	1	1	5	13	.303E+03
EPS MAX	1	1	3	1	.231E-01	1	1	3	4	.208E-01	1	3	3	19	.208E-01
EPS MIN	1	1	5	14	-.292E-01	1	1	5	13	-.276E-01	1	1	3	8	-.276E-01
GAMMA MAX	1	1	5	13	.478E-01	1	1	3	8	.478E-01	1	3	5	28	.478E-01

TIME IN POST = 1.116 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT = 1

MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD	Z-COORD
1	30101			.940E+00	0.	.463E+00	11	30302			.111E+01	.221E+00	.463E+00
2	30102			.132E+01	0.	.463E+00	12	30201			.935E+00	.924E-01	.463E+00
3	30303			.131E+01	.260E+01	.463E+00	13	40101			.106E+01	0.	.664E+00
4	30301			.921E+00	.181E+01	.463E+00	14	40103			.141E+01	0.	.664E+00
5	50101			.120E+01	0.	.854E+00	15	40303			.138E+01	.270E+00	.657E+00
6	50103			.151E+01	0.	.849E+00	16	40301			.102E+01	.190E+00	.660E+00
7	50303			.146E+01	.281E+01	.845E+00	17	50102			.136E+01	0.	.852E+00
8	50301			.113E+01	.213E+01	.849E+00	18	50203			.140E+00	.140E+00	.847E+00
9	30102			.113E+01	6.	.463E+00	19	50302			.129E+01	.247E+00	.847E+00
10	30203			.132E+01	.131E+01	.463E+00	20	50201			.117E+01	.116E+00	.852E+00

FINE GRID ELEMENT = 1

MODE	I	J	K	X-COORD	Y-COORD	Z-COORD	MODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	1	1	3	.940E+00	0.	.463E+00	11	2	3	3	.183E+01	.108E+00	.463E+00
2	3	1	3	.113E+01	0.	.463E+00	12	1	2	3	.938E+00	.464E-01	.463E+00
3	3	3	3	.113E+01	.112E+0E	.463E+00	13	1	1	4	.999E+00	0.	.564E+00
4	1	1	3	.935E+00	.924E-01	.463E+00	14	3	1	4	.118E+01	0.	.564E+00
5	1	1	5	.106E+01	0.	.664E+00	15	3	3	4	.117E+01	.117E+00	.564E+00
6	3	1	5	.123E+01	0.	.662E+00	16	1	3	4	.988E+00	.983E-01	.564E+00
7	3	3	5	.122E+01	.122E+0E	.660E+00	17	2	1	5	.118E+01	0.	.664E+00
8	1	3	5	.109E+01	.174E+0E	.662E+00	18	3	2	5	.121E+01	.621E-01	.664E+00
9	2	1	3	.103E+01	0.	.463E+00	19	2	3	5	.113E+01	.113E+00	.664E+00
10	3	2	3	.113E+01	.760E-01	.463E+00	20	1	2	5	.105E+01	.534E-01	.663E+00

POINT CLAMP AND SLOPE TYPE RG

TYPE	MODE	VALUE
1	1	.1498E-01
2	4	.0498E-01

3	4	-.2172E-01
1	1	.1519E-01
2	1	.3090E-09
3	1	-.2204E-01
1	5	.1102E-01
2	5	-.6569E-09
3	5	-.2023E-01
1	8	.1176E-01
2	8	.2017E-02
3	8	-.1992E-01
1	12	.1509E-01
2	12	.1049E-02
3	12	-.2109E-01
1	13	.1342E-01
2	13	-.2103E-09
3	13	-.2110E-01
1	20	.1179E-01
2	20	.1026E-02
3	20	-.2006E-01
1	16	.1330E-01
2	16	.2032E-02
3	16	-.2006E-01
1	2	.1205E-01
2	2	-.6007E-09
3	2	-.1049E-01
1	6	.9402E-02
2	6	-.1600E-08
3	6	-.1000E-01
1	9	.1354E-01
2	9	-.2341E-09
3	9	-.2022E-01
1	14	.1065E-01
2	14	-.1230E-08
3	14	-.1701E-01
1	17	.1055E-01
2	17	-.1210E-08
3	17	-.1041E-01
1	3	.1100E-01
2	3	.1517E-02
3	3	-.1032E-01
1	11	.1336E-01
2	11	.1771E-02
3	11	-.1999E-01
1	10	.1197E-01
2	10	.7736E-03
3	10	-.1041E-01

FINE GRID ELEMENT # 2													
NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	1	1	5	.106E+01	0.	.664E+00	11	2	3	5	.113E+01	.113E+00	.661E+00
2	3	1	5	.123E+01	0.	.662E+00	12	1	2	5	.105E+01	.534E-01	.663E+00
3	3	3	5	.122E+01	.122E+00	.660E+00	13	1	1	6	.113E+01	0.	.760E+00
4	1	3	5	.105E+01	.104E+00	.662E+00	14	3	1	6	.129E+01	0.	.758E+00
5	1	1	7	.120E+01	0.	.854E+00	15	3	3	6	.120E+01	.127E+00	.756E+00
6	3	1	7	.136E+01	0.	.852E+00	16	1	3	6	.111E+01	.110E+00	.758E+00
7	3	3	7	.133E+01	.112E+00	.849E+00	17	2	1	7	.120E+01	0.	.853E+00
8	1	3	7	.117E+01	.116E+00	.852E+00	18	3	2	7	.135E+01	.601E-01	.850E+00
9	2	1	9	.115E+01	0.	.663E+00	19	2	3	7	.125E+01	.124E+00	.848E+00
10	3	2	5	.123E+01	.621E-01	.661E+00	20	1	2	7	.119E+01	.604E-01	.853E+00

POINT, CLAMP, AND SLOPE TYPE BC.		
TYPE	NODE	VALUE
1	4	.1176E-01
2	4	.2017E-02
3	4	-.1992E-01
.

2	1	-.6559E-09
3	1	-.2623E-01
1	5	.9150E-02
2	5	-.1826E-00
3	5	-.1815E-01
1	8	.9199E-02
2	8	.2014E-02
3	8	-.1703E-01
1	12	.1179E-C1
2	12	.1020E-02
3	12	-.2000E-C1
1	13	.1840E-01
2	13	-.9262E-09
3	13	-.1921E-C1
1	20	.9145E-02
2	20	.1022E-02
3	20	-.1797E-01
1	16	.1830E-01
2	16	.2011E-C2
3	16	-.1491E-C1
1	2	.9402E-02
2	2	-.1600E-00
3	2	-.1660E-C1
1	6	.7336E-02
2	6	-.1849E-00
3	6	-.1467E-01
1	9	.1855E-C1
2	9	-.1210E-C0
3	9	-.1841E-01
1	14	.0297E-C2
2	14	-.1814E-00
3	14	-.1570E-01
1	17	.0189E-02
2	17	-.1595E-G0
3	17	-.1633E-01
1	7	.7220E-C2
2	7	.1481E-C2
3	7	-.1531E-C1
1	18	.7326E-02
2	18	.7709E-03
3	18	-.1515E-C1
1	19	.0021E-C2
2	19	.1748E-02
3	19	-.1653E-01

FINE GRID ELEMENT = 3

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	1	3	3	.935E+00	.924E-01	.463E+00	11	2	5	3	.102E+01	.202E+00	.463E+00
2	3	3	3	.113E+01	.112E+00	.463E+00	12	1	4	3	.929E+00	.138E+00	.463E+00
3	3	5	3	.111E+01	.221E+00	.463E+00	13	1	3	4	.908E+00	.983E-01	.564E+00
4	1	5	3	.921E+00	.183E+00	.463E+00	14	3	3	4	.117E+01	.117E+00	.563E+00
5	1	3	5	.185E+01	.184E+00	.662E+00	15	3	5	4	.145E+01	.220E+00	.562E+00
6	3	3	5	.122E+01	.122E+00	.660E+00	16	1	5	4	.968E+00	.191E+00	.562E+00
7	3	5	5	.120E+01	.234E+00	.658E+00	17	2	3	5	.113E+01	.113E+00	.661E+00
8	1	5	5	.102E+01	.198E+00	.660E+00	18	3	4	5	.121E+01	.179E+00	.659E+00
9	2	3	3	.103E+01	.102E+00	.463E+00	19	2	5	5	.111E+01	.216E+00	.659E+00
10	3	4	3	.112E+01	.167E+00	.463E+00	20	1	4	5	.103E+01	.153E+00	.661E+00

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	4	.1473E-01
2	4	.3947E-02
3	4	-.2136E-01
1	1	.1498E-C1
2	1	.2056E-C2
3	1	-.1770E-C1

1	5	.1176E-01
2	5	.2017E-02
3	5	-.1992E-01
1	8	.1172E-01
2	8	.3092E-02
3	8	-.1959E-01
1	12	.1406E-01
2	12	.3022E-02
3	12	-.2155E-01
1	13	.1330E-01
2	13	.2032E-02
3	13	-.2006E-01
1	20	.1174E-01
2	20	.2973E-02
3	20	-.1976E-01
1	16	.1310E-01
2	16	.3911E-02
3	16	-.2051E-01
1	3	.1170E-01
2	3	.2914E-02
3	3	-.1815E-01
1	7	.9086E-02
2	7	.3101E-02
3	7	-.1620E-01
1	11	.1314E-01
2	11	.3399E-02
3	11	-.1973E-01
1	19	.1022E-01
2	19	.3402E-02
3	19	-.1707E-01
1	15	.1036E-01
2	15	.3079E-02
3	15	-.1712E-01
1	2	.1100E-01
2	2	.1517E-02
3	2	-.1832E-01
1	10	.1179E-01
2	10	.2231E-02
3	10	-.1823E-01
1	9	.1336E-01
2	9	.1771E-02
3	9	-.1999E-01

FINE GRID ELEMENT = 4

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	1	3	5	.109E+01	.104E+00	.662E+00	11	2	9	9	.111E+01	.210E+00	.699E+00
2	3	3	5	.122E+01	.122E+00	.660E+00	12	1	4	5	.103E+01	.153E+00	.661E+00
3	3	5	5	.126E+01	.234E+00	.658E+00	13	1	3	6	.111E+01	.110E+00	.750E+00
4	1	5	5	.102E+01	.198E+00	.660E+00	14	3	3	6	.128E+01	.127E+00	.756E+00
5	1	3	7	.117E+01	.116E+00	.852E+00	15	3	5	6	.124E+01	.241E+00	.754E+00
6	3	3	7	.133E+01	.132E+00	.849E+00	16	1	5	6	.107E+01	.206E+00	.755E+00
7	3	5	7	.129E+01	.247E+00	.847E+00	17	2	3	7	.129E+01	.124E+00	.850E+00
8	1	5	7	.113E+01	.213E+00	.849E+00	18	3	4	7	.132E+01	.192E+00	.848E+00
9	2	3	5	.113E+01	.113E+00	.661E+00	19	2	5	7	.121E+01	.230E+00	.848E+00
10	3	4	5	.121E+01	.179E+00	.659E+00	20	1	4	7	.115E+01	.167E+00	.850E+00

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	4	.1172E-01
2	4	.3092E-02
3	4	-.1959E-01
1	1	.1176E-01
2	1	.2017E-02
3	1	-.1992E-01
1	5	.9150E-02
2	5	.3000E-02

1	3	0.0000E+00
1	3	-.1703E-01
1	3	.9240E-02
2	3	.3900E-02
3	3	-.1750E-01
1	12	.1174E-01
2	12	.2973E-02
3	12	-.1974E-01
1	13	.1030E-01
2	13	.2011E-02
3	13	-.1091E-01
1	20	.9190E-02
2	20	.2970E-02
3	20	-.1770E-01
1	16	.1041E-01
2	16	.3091E-02
3	16	-.1001E-01
1	3	.9000E-02
2	3	.3101E-02
3	3	-.1620E-01
1	7	.6721E-02
2	7	.2720E-02
3	7	-.1000E-01
1	11	.1022E-01
2	11	.3002E-02
3	11	-.1707E-01
1	19	.7000E-02
2	19	.3310E-02
3	19	-.1000E-01
1	15	.7072E-02
2	15	.2902E-02
3	15	-.1530E-01
1	6	.7220E-02
2	6	.1001E-02
3	6	-.1031E-01
1	10	.7010E-02
2	10	.2131E-02
3	10	-.1510E-01
1	17	.0021E-02
3	17	-.1700E-02
3	17	-.1053E-01

FINE GRID ELEMENT - 5

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	1	3	.113E+01	0.	.463E+00	11	4	3	3	.127E+01	.121E+00	.463E+00
2	5	1	3	.132E+01	0.	.463E+00	12	3	2	3	.113E+01	.560E-01	.463E+00
3	5	3	3	.132E+01	.131E+00	.463E+00	13	3	1	4	.110E+01	0.	.464E+00
4	3	3	3	.113E+01	.112E+00	.463E+00	14	5	1	4	.135E+01	0.	.562E+00
5	3	1	4	.123E+01	0.	.662E+00	15	5	3	4	.136E+01	.135E+00	.562E+00
6	5	1	5	.141E+01	0.	.560E+00	16	3	3	4	.117E+01	.117E+00	.563E+00
7	5	3	5	.140E+01	.139E+00	.650E+00	17	4	1	5	.132E+01	0.	.661E+00
8	3	3	5	.122E+01	.122E+00	.660E+00	18	5	2	5	.141E+01	.700E-01	.659E+00
9	4	1	5	.122E+01	0.	.463E+00	19	4	3	5	.131E+01	.131E+00	.659E+00
10	5	2	3	.132E+01	.656E-01	.463E+00	20	3	2	5	.123E+01	.621E-01	.661E+00

POINT, CLAMP, AND SLOPE TYPE PC.

TYPE	NODE	VALUE
1	2	.9539E-02
2	2	-.1042E-00
3	2	-.1530E-01
1	3	.9414E-02
2	3	.1100E-02
3	3	-.1510E-01
1	7	.7916E-02
2	7	.1325E-02
3	7	-.1391E-01

2	6	-.1936E-08
3	6	-.1355E-01
1	10	.9470E-02
2	10	.9621E-03
3	10	-.1924E-01
1	15	.0039E-02
2	15	.1291E-02
3	15	-.1440E-01
1	18	.7770E-02
2	18	.6900E-03
3	18	-.1309E-01
1	14	.0471E-02
2	14	-.1576E-00
3	14	-.1443E-01
1	1	.1205E-01
2	1	-.0807E-09
3	1	-.1049E-01
1	5	.9402E-02
2	5	-.1600E-00
3	5	-.1060E-01
1	9	.1071E-01
2	9	-.9901E-09
3	9	-.1605E-01
1	17	.0393E-02
2	17	-.1050E-00
3	17	-.1506E-01
1	13	.1065E-01
2	13	-.1230E-00
3	13	-.1761E-01
1	4	.1100E-01
2	4	.1517E-02
3	4	-.1032E-01
1	12	.1197E-01
2	12	.7730E-03
3	12	-.1041E-01
1	11	.1057E-01
2	11	.1296E-02
3	11	-.1672E-01

FINE GRID ELEMENT = 6

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	1	5	.123E+01	0.	.662E+00	11	4	3	9	.131E+01	.131E+00	.659E+00
2	5	1	5	.141E+01	0.	.660E+00	12	3	2	5	.123E+01	.621E-01	.661E+00
3	5	3	5	.140E+01	.139E+00	.650E+00	13	3	1	6	.129E+01	0.	.758E+00
4	3	3	5	.122E+01	.122E+00	.660E+00	14	5	1	6	.146E+01	0.	.755E+00
5	3	1	7	.130E+01	0.	.652E+00	15	5	3	6	.149E+01	.140E+00	.794E+00
6	5	1	7	.151E+01	0.	.649E+00	16	3	3	6	.120E+01	.127E+00	.756E+00
7	5	3	7	.150E+01	.148E+00	.647E+00	17	4	1	7	.143E+01	0.	.850E+00
8	3	3	7	.133E+01	.132E+00	.649E+00	18	5	2	7	.151E+01	.760E-01	.848E+00
9	4	1	5	.132E+01	0.	.661E+00	19	4	3	7	.142E+01	.140E+00	.848E+00
10	5	2	5	.141E+01	.708E-01	.659E+00	20	3	2	7	.135E+01	.681E-01	.850E+00

POINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	2	.7517E-02
2	2	-.1936E-08
3	2	-.1355E-01
1	3	.7910E-02
2	3	.1325E-02
3	3	-.1391E-01
1	7	.6620E-02
2	7	.9415E-03
3	7	-.1313E-01
1	6	.5956E-02
2	6	-.2135E-08
3	6	-.1355E-01

1	0	-.4474E-04
2	10	.7770E-02
3	10	.6900E-03
1	10	-.1389E-01
2	15	.7246E-02
3	15	.1209E-02
1	19	-.1340E-01
2	10	.6397E-02
3	10	.5164E-03
1	10	-.1274E-01
2	14	.6077E-02
3	14	-.2123E-00
1	14	-.1264E-01
2	1	-.9402E-02
3	1	-.1600E-00
1	1	-.1668E-01
2	5	.7336E-02
3	5	-.1049E-00
1	5	-.1467E-01
2	9	.8393E-02
3	9	-.1050E-00
1	9	-.1506E-01
2	17	.6592E-02
3	17	-.2066E-00
1	17	-.1313E-01
2	13	.8297E-02
3	13	-.1014E-00
1	13	-.1576E-01
2	8	.7220E-02
3	8	.1481E-02
1	8	-.1531E-01
2	19	.6756E-02
3	19	.1212E-02
1	19	-.1410E-01
2	20	.7326E-02
3	20	.7709E-03
1	20	-.1515E-01

FINE GRID ELEMENT = 7													
MODE	I	J	K	X-COORD	Y-COORD	Z-COORD	MODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	3	3	.113E+01	.112E+00	.463E+00	11	4	5	3	.121E+01	.240E+00	.403E+00
2	5	3	3	.132E+01	.131E+00	.463E+00	12	3	4	3	.112E+01	.167E+00	.403E+00
3	5	5	3	.131E+01	.260E+00	.463E+00	13	3	3	4	.117E+01	.117E+00	.563E+00
4	3	5	3	.111E+01	.221E+00	.463E+00	14	5	3	4	.136E+01	.135E+00	.562E+00
5	3	3	5	.122E+01	.122E+00	.660E+00	15	5	5	4	.134E+01	.265E+00	.561E+00
6	5	3	5	.140E+01	.139E+00	.658E+00	16	3	5	4	.115E+01	.228E+00	.562E+00
7	5	5	5	.130E+01	.270E+00	.657E+00	17	4	3	5	.131E+01	.131E+00	.659E+00
8	3	5	5	.120E+01	.234E+00	.658E+00	18	5	4	5	.139E+01	.206E+00	.658E+00
9	4	3	3	.122E+01	.121E+00	.463E+00	19	4	5	5	.129E+01	.252E+00	.658E+00
10	5	4	3	.131E+01	.195E+00	.463E+00	20	3	4	5	.121E+01	.179E+00	.659E+00

POINT, CLAMP, AND SLOPE TYPE BC.		
TYPE	MODE	VALUE
1	2	.9414E-02
2	2	.1106E-02
3	2	-.1510E-01
1	3	.9279E-02
2	3	.2137E-02
3	3	-.1511E-01
1	7	.7889E-02
2	7	.2431E-02
3	7	-.1300E-01
1	6	.7916E-02
2	6	.1325E-02
3	6	-.1391E-01
1	10	.9348E-02
2	10	.4444E-02

1	10	-.1516E-01
1	15	.0569E-02
2	15	.2435E-02
3	15	-.1362E-01
1	18	.7956E-02
2	18	.1905E-02
3	18	-.1361E-01
1	14	.0639E-02
2	14	.1291E-02
3	14	-.1448E-01
1	4	.1170E-01
2	4	.2914E-02
3	4	-.1815E-01
1	8	.9006E-02
2	8	.3101E-02
3	8	-.1820E-01
1	11	.1041E-01
2	11	.2494E-02
3	11	-.1661E-01
1	16	.1036E-01
2	16	.3079E-02
3	16	-.1712E-01
1	19	.0306E-02
2	19	.2751E-02
3	19	-.1457E-01
1	1	.1100E-01
2	1	.1517E-02
3	1	-.1832E-01
1	12	.1179E-01
2	12	.2231E-02
3	12	-.1823E-01
1	9	.1057E-01
2	9	.1296E-02
3	9	-.1872E-01

FINE GRID ELEMENT = 8

NODE	I	J	K	X-COORD	Y-COORD	Z-COORD	NODE	I	J	K	X-COORD	Y-COORD	Z-COORD
1	3	3	5	.122E+01	.122E+00	.660E+00	11	4	5	5	.129E+01	.252E+00	.658E+00
2	3	3	5	.140E+01	.139E+00	.658E+00	12	3	4	5	.121E+01	.179E+00	.659E+00
3	3	3	5	.138E+01	.276E+00	.657E+00	13	3	3	6	.128E+01	.127E+00	.798E+00
4	3	3	5	.120E+01	.234E+00	.658E+00	14	3	3	6	.145E+01	.144E+00	.754E+00
5	3	3	7	.133E+01	.132E+00	.849E+00	15	3	5	6	.142E+01	.276E+00	.752E+00
6	3	3	7	.150E+01	.148E+00	.847E+00	16	3	5	6	.124E+01	.241E+00	.754E+00
7	3	5	7	.146E+01	.281E+00	.845E+00	17	4	3	7	.142E+01	.148E+00	.848E+00
8	3	5	7	.129E+01	.247E+00	.847E+00	18	5	4	7	.146E+01	.216E+00	.846E+00
9	4	3	9	.131E+01	.131E+00	.859E+00	19	4	3	7	.139E+01	.284E+00	.848E+00
10	5	4	5	.139E+01	.206E+00	.658E+00	20	3	4	7	.132E+01	.192E+00	.848E+00

PCINT, CLAMP, AND SLOPE TYPE BC.

TYPE	NODE	VALUE
1	2	.7916E-02
2	2	.1325E-02
3	2	-.1391E-01
1	3	.7889E-02
2	3	.2431E-02
3	3	-.1308E-01
1	7	.6460E-02
2	7	.1510E-02
3	7	-.1195E-01
1	6	.6628E-02
2	6	.9415E-03
3	6	-.1313E-01
1	10	.7956E-02
2	10	.1905E-02
3	10	-.1361E-01

4	17	.1100E-04
2	15	.2125E-02
3	15	-.1234E-01
1	10	.6649E-02
2	10	.1275E-02
3	10	-.1266E-01
1	14	.7248E-02
2	14	.1209E-02
3	14	-.1346E-01
1	4	.9886E-02
2	4	.3101E-02
3	4	-.1620E-01
1	0	.6721E-02
2	0	.2720E-02
3	0	-.1466E-01
1	11	.8388E-02
2	11	.8791E-02
3	11	-.1457E-01
1	16	.7872E-02
2	16	.2982E-02
3	16	-.1538E-01
1	19	.6368E-02
2	19	.2121E-02
3	19	-.1320E-01
1	5	.7220E-02
2	5	.1481E-02
3	5	-.1531E-01
1	20	.7018E-02
2	20	.2131E-02
3	20	-.1515E-01
1	17	.6756E-02
2	17	.1212E-02
3	17	-.1410E-01

TIME IN REZONE = 1.214 SECONDS

TIME IN FORMKF = 3.772 SECONDS

TIME IN PREFRONT = .308

TOTAL NUMBER OF D.O.F.'S = 278

D.O.F. IN FRONT = 112

MAXIMUM ACTIVE STORAGE = 8966

TOTAL NICKNAME STORAGE = 224

BUFFER LENGTH = 18333

TIME IN FORWARD ELIMINATION = 7.580

NUMBER OF SECTORS (PRUS) = 201

TIME IN BACKSUBSTITUTION = .643

TIME IN ZIPP = 8.539 SECONDS

BLOCK OPTION

BOUNDS

	MIN	MAX		MIN	MAX
X	-.1000E+21	.1000E+21	I	0	0
Y	-.1000E+21	.1000E+21	J	0	0
Z	-.1000E+21	.1000E+21	K	0	0

PRINT LEVEL = 4

STRESS POINTS FOR BRICK (DEGEN) ELEMENTS

POINT	S1	S2	S3
1	-1.000	-1.000	-1.000
2	1.000	-1.000	-1.000
3	1.000	1.000	-1.000
4	-1.000	1.000	-1.000
5	-1.000	-1.000	1.000
6	1.000	-1.000	1.000
7	1.000	1.000	1.000
8	-1.000	1.000	1.000
9	0.000	0.000	0.000

STRESS POINTS FOR PRISM ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	-1.000
2	0.000	1.000	0.000	-1.000
3	0.000	0.000	1.000	-1.000
4	1.000	0.000	0.000	1.000
5	0.000	1.000	0.000	1.000
6	0.000	0.000	1.000	1.000
7	.333	.333	.333	0.000

STRESS POINTS FOR WEDGE ELEMENTS

POINT	S1	S2	S3
1	.050	0.000	-1.000
2	1.000	0.000	-1.000
3	1.000	1.000	-1.000
4	.050	0.000	1.000
5	1.000	0.000	1.000
6	1.000	1.000	1.000
7	.667	.500	0.000

STRESS POINTS FOR TETRA ELEMENTS

POINT	S1	S2	S3	S4
1	1.000	0.000	0.000	0.000
2	0.000	1.000	0.000	0.000
3	0.000	0.000	1.000	0.000
4	0.000	0.000	0.000	1.000
5	.250	.250	.250	.250

DISPLACEMENTS FOR BRICK ELEMENT NO. 1 MATERIAL = 1

I	J	K	U	V	W	M
1	1	3	.151E-01	.389E-09	-.220E-01	.741E+00
1	1	3	.118E-01	-.689E-09	-.189E-01	-.129E+00
1	1	3	.118E-01	.151E-02	-.183E-01	-.845E+00
1	1	3	.118E-01	.285E-02	-.217E-01	.749E-01
1	1	3	.118E-01	-.656E-09	-.202E-01	.896E+02
1	1	3	.118E-01	-.160E-08	-.166E-01	.373E+00
1	1	3	.118E-01	.142E-02	-.165E-01	.275E+00
1	1	3	.118E-01	.201E-02	-.192E-01	.870E-01
1	1	3	.118E-01	.234E-09	-.202E-01	.870E-01
1	1	3	.118E-01	.773E-03	-.181E-01	.870E-01
1	1	3	.118E-01	.177E-02	-.199E-01	.870E-01
1	1	3	.118E-01	.104E-02	-.218E-01	.870E-01
1	1	3	.118E-01	.218E-09	-.218E-01	.870E-01
1	1	3	.118E-01	.123E-08	-.176E-01	.870E-01
1	1	3	.118E-01	.173E-02	-.173E-01	.870E-01
1	1	3	.118E-01	.283E-02	-.286E-01	.870E-01
1	1	3	.118E-01	.121E-08	-.181E-01	.870E-01
1	1	3	.118E-01	.786E-03	-.169E-01	.870E-01
1	1	3	.118E-01	.173E-02	-.182E-01	.870E-01
1	1	3	.118E-01	.186E-02	-.186E-01	.870E-01

STRESSES FOR BRICK ELEMENT NO. 1 MATERIAL = 1

PCINT	X	Y	Z	SIGMAX	EPSX	SIGMAY	EPSY	SIGMAZ	EPSZ	TAUXY	GAMMAX	TAUYZ	GAMMAX	TAUZX	GAMMAX	SIGMA1	SIGMA2	SIGMA3	TAUMAX
1	.94E+00	0.	.44E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
2	.11E+01	0.	.46E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
3	.11E+01	.11E+00	.46E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
4	.93E+00	.92E-01	.46E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
5	.11E+01	0.	.66E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
6	.12E+01	0.	.66E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
7	.12E+01	.12E+00	.66E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
8	.10E+01	.10E+00	.66E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04
9	.11E+01	.54E-01	.56E+00	.45E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04	.50E+04

DISPLACEMENTS FOR BRICK ELEMENT NO.

STRESSES FOR BRICK ELEMENT NO. 2 MATERIAL = 1

DISPLACEMENTS FOR BRICK ELEMENT NO. 3 MATERIAL = 1

[illegible]

1

STRESSES FOR BRICKW ELEMENT NO. 4 MATERIAL = 1[illegible]

DISPLACEMENTS FOR BRICK ELEMENT NO. 5 MATERIAL = 1

[illegible]

STRESSES FOR GRICK ELEMENT NO. 5 MATERIAL = 1

[illegible]

DISPLACEMENTS FOR BRICKM ELEMENT NO. 6 MATERIAL = 1

I	J	K	U	V	W	M
3	1	5	.9402E-02	-.1600E-00	-.1600E-01	.3730E+00
5	1	5	.7317E-02	-.1935E-00	-.1355E-01	.1132E+01
5	1	5	.1325E-02	-.1391E-01	-.1391E-01	.3054E+00
3	3	5	.9286E-02	-.1424E-02	-.1094E-01	.2790E+00
3	1	7	.7336E-02	-.1849E-00	-.1467E-01	.0903E-01
5	1	7	.5956E-02	-.2139E-00	-.1171E-01	-.1831E+00
5	1	7	.6620E-02	.0415E-03	-.1313E-01	.1400E+00
3	3	7	.7220E-02	-.1891E-02	-.1971E-01	.9377E+00
4	1	5	.8393E-02	-.1850E-00	-.1506E-01	
9	2	5	.7770E-02	.6900E-03	-.1309E-01	
4	3	5	.8442E-02	.1691E-02	-.1920E-01	
3	2	5	.9300E-02	.7805E-03	-.1695E-01	
3	1	6	.8597E-02	-.1814E-00	-.1978E-01	
5	1	6	.8879E-02	-.2129E-00	-.1280E-01	
5	3	6	.7246E-02	.1209E-02	-.1346E-01	
3	3	6	.8275E-02	.1990E-02	-.1907E-01	
4	1	7	.6592E-02	-.2868E-00	-.1313E-01	
5	2	7	.6397E-02	.5164E-03	-.1274E-01	
4	3	7	.6756E-02	.1212E-02	-.1418E-01	
5	2	7	.7320E-02	.7709E-03	-.1919E-01	

STRESSES FOR BRICKM ELEMENT NO. 6 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TAUXX GAMMAX	TAUYX GAMMAX	TAUZY GAMMAX	SIGMA1 EPS1	SIGMA2 EPS2	SIGMA3 EPS3	TAUMAX GAMMAX
46	.12E+01	0.	.68E+00	.22E+04	.29E+04	.23E+04	.97E+02	.53E+02	.97E+02	.72E+03	.24E+04	.21E+04	.24E+04
47	.14E+01	0.	.66E+00	.12E+01	.14E-01	.15E-02	.77E-02	-.91E-02	-.91E-02	.15E-01	.17E-02	.17E-01	.35E-01
48	.14E+01	.14E+00	.66E+00	.70E+04	.73E+04	.73E+04	.28E+02	.28E+02	.28E+02	.73E+04	.73E+04	.73E+04	.73E+04
49	.12E+01	.12E+00	.68E+00	.94E+02	.10E-01	.71E-03	.43E-02	-.72E-02	-.72E-02	.11E-01	.38E-02	.11E-01	.24E-01
50	.14E+01	0.	.65E+00	.18E+04	.18E+04	.18E+04	.74E-02	.64E-02	.64E-02	.94E+02	.18E+02	.18E+02	.18E+02
51	.15E+01	0.	.65E+00	.10E-01	.10E-01	.69E-03	-.69E-02	-.69E-02	-.69E-02	.14E-01	.43E-03	.14E-01	.27E-01
52	.12E+01	.12E+00	.68E+00	.71E+03	.71E+03	.52E+03	.28E+01	-.47E+02	.14E+03	.72E+03	.59E+03	.39E+03	.19E+03
53	.13E+01	.13E+00	.65E+00	.13E+04	.13E+04	.13E+04	.44E+01	-.74E+02	.14E+03	.11E+01	.28E-02	.11E+01	.28E-01
54	.14E+01	.69E-01	.74E+00	.75E+02	.75E+02	.51E+03	.67E-02	-.17E-01	.94E+02	.13E-01	.14E-02	.13E-01	.27E-01
				.98E+03	.98E+03	.84E+03	.13E+02	-.13E+02	.38E+02	.18E+02	.93E+03	.87E+03	.98E+02
				.23E-03	.46E-02	.46E-02	.23E-03	.23E-03	.23E-03	.46E-02	.14E-02	.46E-02	.14E-01
				.34E+04	.34E+04	.34E+04	.56E+02	.24E+02	.49E+02	.34E+04	.34E+04	.34E+04	.34E+04
				.75E+02	.99E-02	.46E-02	.68E-02	.46E-02	.77E-02	.11E-01	.16E-02	.11E-01	.22E-01
				.29E+04	.23E+04	.21E+04	.10E+02	-.10E+02	.74E+02	.23E+04	.21E+04	.23E+04	.23E+04
				.85E+02	.11E-01	.16E-02	-.14E-02	-.28E-02	.12E-01	.11E-01	.15E-02	.11E-01	.23E-01

DISPLACEMENTS FOR BRICK ELEMENT NO. 7 MATERIAL = 1

I	J	K	U	V	W	H
1	2	3	.110E-01	.151E-02	-.132E-01	.845E+00
4	5	6	.941E-02	.110E-02	-.131E-01	-.919E+01
7	8	9	.927E-02	.213E-02	-.151E-01	.242E+01
10	11	12	.117E-01	.291E-02	-.181E-01	-.913E+00
13	14	15	.926E-02	.142E-02	-.165E-01	.275E+00
16	17	18	.791E-02	.132E-02	-.139E-01	.309E+00
19	20	21	.708E-02	.231E-02	-.130E-01	.121E+00
22	23	24	.906E-02	.310E-02	-.180E-01	.590E+00
25	26	27	.105E-01	.129E-02	-.167E-01	
28	29	30	.934E-02	.163E-02	-.151E-01	
31	32	33	.104E-01	.249E-02	-.166E-01	
34	35	36	.117E-01	.231E-02	-.183E-01	
37	38	39	.103E-01	.173E-02	-.173E-01	
40	41	42	.863E-02	.189E-02	-.148E-01	
43	44	45	.859E-02	.243E-02	-.132E-01	
46	47	48	.183E-01	.307E-02	-.171E-01	
49	50	51	.844E-02	.169E-02	-.152E-01	
52	53	54	.795E-02	.190E-02	-.136E-01	
55	56	57	.830E-02	.271E-02	-.147E-01	
58	59	60	.956E-02	.236E-02	-.169E-01	

STRESSES FOR BRICK ELEMENT NO. 7 MATERIAL = 1

POINT	X	Y	Z	SIGMAX	EPSX	SIGMAY	EPSY	SIGMAZ	EPSZ	TAUXY	GAMMAX	TAUYZ	GAMMAX	TAUZX	GAMMAX	SIGMA1	EPS1	SIGMA2	EPS2	SIGMA3	EPS3	TAUMAX	GAMMAX
52	.11E+01	.11E+00	.46E+00	.52E+04	.52E+04	.55E+04	.55E+04	.54E+04	.54E+04	-.40E+02	-.40E+02	.54E+02	.54E+02	.41E+02	.41E+02	.59E+04	.59E+04	.57E+04	.57E+04	.57E+04	.57E+04	.57E+04	.57E+04
56	.13E+01	.13E+00	.46E+00	-.14E-01	-.14E-01	.13E-01	.13E-01	.53E-02	.53E-02	-.63E-02	-.63E-02	.85E-02	.85E-02	.74E+02	.74E+02	.21E+03	.21E+03	.20E+03	.20E+03	.20E+03	.20E+03	.20E+03	.20E+03
57	.13E+01	.26E+00	.46E+00	-.11E-01	-.11E-01	.81E-02	.81E-02	.17E-02	.17E-02	-.41E-02	-.41E-02	.47E-02	.47E-02	.12E-01	.12E-01	.89E-02	.89E-02	.36E-02	.36E-02	.14E-01	.14E-01	.23E-01	.23E-01
58	.11E+01	.22E+00	.46E+00	-.10E-01	-.10E-01	.78E-02	.78E-02	.89E-02	.89E-02	-.76E-02	-.76E-02	.85E-02	.85E-02	.11E-01	.11E-01	.12E-01	.12E-01	.68E-02	.68E-02	.13E-01	.13E-01	.23E-01	.23E-01
59	.12E+01	.12E+00	.66E+00	-.13E-01	-.13E-01	.11E-01	.11E-01	.46E-02	.46E-02	-.11E-01	-.11E-01	.87E-02	.87E-02	.71E-02	.71E-02	.14E-01	.14E-01	.14E-01	.14E-01	.14E-01	.14E-01	.14E-01	.14E-01
60	.14E+01	.14E+00	.66E+00	-.12E-01	-.12E-01	.19E-01	.19E-01	.33E-02	.33E-02	.14E-01	.14E-01	.15E-01	.15E-01	.13E-01	.13E-01	.22E-01	.22E-01	.53E-03	.53E-03	.10E-01	.10E-01	.24E-01	.24E-01
61	.14E+01	.27E+00	.66E+00	-.43E-02	-.43E-02	.80E-02	.80E-02	.12E-02	.12E-02	-.76E-02	-.76E-02	.68E-02	.68E-02	.86E-02	.86E-02	.96E-02	.96E-02	.10E-02	.10E-02	.89E-02	.89E-02	.10E-01	.10E-01
62	.12E+01	.23E+00	.66E+00	-.22E-02	-.22E-02	.66E-02	.66E-02	.17E-02	.17E-02	-.73E-02	-.73E-02	.16E-01	.16E-01	.70E-02	.70E-02	.13E-01	.13E-01	.22E-02	.22E-02	.86E-02	.86E-02	.21E-01	.21E-01
63	.13E+01	.19E+00	.56E+00	-.71E-02	-.71E-02	.94E-02	.94E-02	.93E-03	.93E-03	-.24E-01	-.24E-01	.21E-01	.21E-01	.62E-02	.62E-02	.19E-01	.19E-01	.80E-03	.80E-03	.17E-01	.17E-01	.17E-01	.17E-01
				.27E+04	.27E+04	.29E+04	.29E+04	.20E+04	.20E+04	-.41E+02	-.41E+02	.55E+02	.55E+02	.66E+02	.66E+02	.30E+04	.30E+04	.29E+04	.29E+04	.27E+04	.27E+04	.27E+04	.27E+04
				-.10E-01	-.10E-01	.82E-02	.82E-02	.84E-03	.84E-03	-.65E-02	-.65E-02	.86E-02	.86E-02	.10E-01	.10E-01	.10E-01	.10E-01	.19E-02	.19E-02	-.13E-01	-.13E-01	.23E-01	.23E-01

DISPLACEMENTS FOR BRICK ELEMENT NO. 8 MATERIAL = 1

I	J	K	U	V	M	M
3	3	5	.928E-02	.142E-02	-.165E-01	.2750E+00
3	3	5	.791E-02	.132E-02	-.139E-01	.309E+00
3	3	5	.788E-02	.131E-02	-.138E-01	.121E+00
3	3	5	.908E-02	.140E-02	-.162E-01	.988E+00
3	3	7	.728E-02	.141E-02	-.131E-01	.5537E+00
3	3	7	.662E-02	.141E-02	-.131E-01	.1408E+00
3	3	7	.646E-02	.141E-02	-.131E-01	.1808E+01
3	3	7	.672E-02	.141E-02	-.131E-01	.2109E+01
3	3	5	.844E-02	.160E-02	-.152E-01	
3	3	5	.795E-02	.150E-02	-.135E-01	
3	3	5	.830E-02	.175E-02	-.145E-01	
3	3	5	.958E-02	.230E-02	-.166E-01	
3	3	6	.827E-02	.150E-02	-.138E-01	
3	3	6	.728E-02	.120E-02	-.123E-01	
3	3	6	.718E-02	.115E-02	-.123E-01	
3	3	6	.787E-02	.120E-02	-.130E-01	
3	3	7	.675E-02	.121E-02	-.118E-01	
3	3	7	.664E-02	.127E-02	-.120E-01	
3	3	7	.630E-02	.121E-02	-.120E-01	
3	3	7	.701E-02	.131E-02	-.131E-01	

STRESSES FOR BRICK ELEMENT NO. 8 MATERIAL = 1

POINT	X	Y	Z	SIGMAX EPSX	SIGMAY EPSY	SIGMAZ EPSZ	TAUXX GAMMAX	TAUZY GAMMAZY	TAUZX GAMMAX	SIGMAX EPS1	SIGMAY EPS2	SIGMAZ EPS3	TAUXX GAMMAX	TAUZY GAMMAX	TAUZX GAMMAX
64	.12E+01	.12E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
65	.14E+01	.14E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
66	.14E+01	.27E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
67	.12E+01	.23E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
68	.13E+01	.13E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
69	.15E+01	.15E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
70	.12E+01	.23E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
71	.13E+01	.25E+00	.68E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04
72	.13E+01	.28E+00	.75E+00	.13E+04	.20E+04	.17E+04	.87E+02	.14E+01	.14E+01	.21E+01	.21E+01	.18E+01	.13E+04	.13E+04	.13E+04

AD-A053 607

ARMY MISSILE RESEARCH AND DEVELOPMENT COMMAND REDSTO--ETC F/G 21/9.2
THREE-DIMENSIONAL FINITE ELEMENT ANALYSIS OF A SOLID PROPELLANT--ETC(U)
NOV 77 R M HACKETT

UNCLASSIFIED

DRDMI-T-78-18

NL

2 OF 2
AD
A053607



END
DATE
FILMED
6-78
DDC

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS															
FIRST			SECOND			THIRD									
I	J	K	POINT NO.	STRESS	I	J	K	POINT NO.	STRESS	I	J	K	POINT NO.	STRESS	
MATERIAL NUMBER = 1															
SIGMA MAX	3	3	3	57	.155E+05	1	3	5	32	.003E+04	1	1	5	17	.003E+04
SIGMA MIN	1	3	5	35	-.134E+05	1	1	5	14	-.719E+04	3	3	3	56	-.508E+04
TAU MAX	1	3	5	35	.303E+03	1	1	3	1	.275E+03	1	1	5	13	.269E+03
EPS MAX	1	1	3	1	.231E-01	1	1	3	4	.219E-01	1	3	3	19	.219E-01
EPS MIN	1	3	5	35	-.276E-01	1	1	5	13	-.227E-01	1	1	3	8	-.227E-01
GAMMA MAX	1	3	5	35	.478E-01	1	1	3	1	.434E-01	1	1	5	13	.425E-01
TIME IN POST		= 1.120 SECONDS													
TIME IN STOP		= .054501 SECONDS													

NICON SCOPE 3.4.2 HN SN 68 MXN 9.0 14.27
 15.22.58.MHLKPM FROM /KP
 15.22.58.IP 00000576 WORDS - FILE INPUT , DC 00
 15.22.58.MHLKPM.T1000,CN200000,L1000.
 15.22.59.7E01K10N05 7200 A3 MACKETT 0N01
 15.23.00.LIMIT(1000)
 15.23.00.ATTACH(TEX30,KPXXNM,ID=KPXX,CY=3,NR=1)
 15.23.00.DISPOSE(OUTPUT,"PW=C")
 15.41.54.LOSET(PRESET=ZERO)
 15.41.54.TEX30.
 16.29.10. NON-FATAL ERROR(S) IN OVERLAY GEN.
 18.37.31. STOP
 18.37.31. 05.500 CP SECONDS EXECUTION TIME
 18.37.31.EXIT.
 18.37.31.OP 00043000 WORDS - FILE OUTPUT , DC 40
 18.37.31.MS 43000 WORDS (340400 MAX USED)
 18.37.31.CPA 92.477 SEC. 83.230 ADJ.
 18.37.31.IO 96.901 SEC. 94.630 ADJ.
 18.37.31.CH 9367.442 KMS. 95.276 ADJ.
 18.37.32.PP 196.309 SEC. DATE 10/10/77
 18.37.32.EJ END OF JOB. KP

```

1 SFINDOVL = STAI TO CYLINDRICAL FORE TRANSITION (II)
2 SETUP,4,PRECRI0
3 ISJ,PROP.LLANT,1,1 9:4.449
4 ISJ,CASE,2,3,6/,..3
5 ENJ,MATERIALS
6 BLJCK<G,1, 1,1,1, 1,1,1, 7,.,. $ PROPELLANT NODES
7 9,.,.,.,. 2,447,.,.,. 1,731,1,73,.,.,. 665,.,.665,.,.
8 9,.,.,.,.403, 2,447,.,.,.403, 1,731,1,73,.,.,.403, 665,.,.665,.,.403
9 1,2,2,30,.,.021,1,0, 12,.,.014,.,.470,0, 10,2,43,.,.021,.,.463, 20,.,.014,.,.470,.,.463/
10 22,2,100,1,250,6, 24, 548,.,.2,3,3, 30,2 106,1 250,.,.463, 32,.,.908,.,.243,.,.403
11 BLJCK<G,.,. 1,1,1,3, 1,.,.7, 7,5 $ PRJPELLANT NODES
12 4,.,.,.,.403, 2,447,.,.,.403, 1,731,1,731,.,.403, 665,.,.665,.,.403/
13 2,1,2,3,1,1,942, 2,447,.,.,.1,942, 1 731,1,731 342, 1,.,.002,.,.051,1,942
14 1,.,.2,43,.,.021,.,.403, 2,.,.014,.,.470,.,.463, 13,.,.311,.,.973/
15 10,2,43,.,.021,1,1,942, 2,.,.014,.,.33,1,942, 22,2,100,1,250,.,.463/
16 2,.,.447,.,.2,43,.,.403, 20,1,775,.,.1,432, 30,2,106,1,250,1,942/
17 32,1,75, 33,1,402
18 BLJCK<G,1, 1,1,1,7, 1,.,.5, 7,.,. $ PROPELLANT NODES
19 2,1,2,3,1,1,942, 2,447,.,.,.1,942, 1 731,1,731,30,1,942, 665,.,.051,1,942/
20 2,1,2,3,1,2,403, 2,447,.,.,.2,403, 1 731,1,731,2,403, 665,.,.051,2,403
21 1,.,.2,30,.,.021,1,1,942, 12,1,15,.,.33,1,942, 10,2,43,.,.021,.,.463, 20,.,.014,.,.470,.,.463/
22 22,2,100,1,250,1,942, 24,1,75,.,.33,1,942, 30,2,106,1,250,1,942, 32,1,75,.,.33,2,403
23 BLJCK,2, 5,1,1,7, 7,.,.3 $ CASE NODES
24 2,.,.447,.,.,.2,403,1,1,942,2,5,7,45,1,2,447,403,./
25 2,.,.447,.,.,.403,2,5,17,45,.,.4,3,2,5,17,45,.,.002,2,447,.,.5,.,.403
26 BLJCK,2, 5,1,1,3, 7,.,.1 $ CASE NODES
27 2,.,.447,.,.,.403,2,5,17,.,.,.4,3,2,5,17,45,.,.002,2,447,.,.5,.,.403/
28 2,.,.447,.,.,.1,942,2,5,17,.,.,.1,942,2,5,17,45,1,942,2,4,47,45,1,942
29 BLJCK,2, 5,1,1,7, 7,.,.4 $ CASE NODES
30 2,.,.447,.,.,.1,942,2,5,17,.,.,.1,942,2,5,17,45,1,3+2,2,4,47,45,1,942/
31 2,447,45,2,403,2,5,17,.,.,.2,447,2,5,17,45,2,403,2,447,45,2,403
32 ENJ,GRID
33 KLJOP,2
34 ILJOP,2
35 J,LOP,2
36 BLJCK,1, 1,1,1, $ PROPELLANT ELEMENTS
37 J,NO
38 I,J
39 K,NO
40 KLJOP,4
41 JLJOP,2
42 BLJCK,2, 5,1,1,1 $ CASE ELEMENTS
43 J,NO
44 K,NO
45 KLJOP,4
46 ILOOP,3
47 30,SLOPE,1,1,1, 5 $ L DEGREE FACE
48 30,SLOPE,1,3,1, 2 $ 45 DEGREE FACE
49 I,NO
50 K,NO
51 JLJOP,2
52 30,SLOPE,1,1,1, 0 $ END OF CASE
53 J,NO
54 KLJOP,4
55 JLJOP,2
56 30,PRESSURE, 1,1,1, 4,1,425E3 $ 1425 PSI PRESSURE
57 J,NO
58 K,NO
59 30,JZ,1,1,1, 6,.-2,104E-2
60 30,JZ,1,2,1, 6,.-2,104E-2
61 30,JZ,1,3,1, 6,.-2,104E-2
62 30,JZ,1,4,1, 6,.-2,104E-2

```

```

63 BC,UZ,1,5,1, 6,-2.184E-2
64 BC,JZ,2,1,1, 0,-1.038E-2
65 BC,UZ,2,3,1, 8,-1.638E-2
66 BC,UZ,2,5,1, 8,-1.038E-2
67 BC,UZ,3,1,1, 6,-1.092E-2
68 BC,UZ,3,2,1, 6,-1.092E-2
69 BC,UZ,3,3,1, 6,-1.092E-2
70 BC,UZ,3,4,1, 8,-1.092E-2
71 BC,JZ,3,5,1, 6,-1.692E-2
72 BC,UZ,4,1,1, 6,-6.540E-2
73 BC,UZ,4,3,1, 8,-6.540E-2
74 BC,UZ,4,5,1, 8,-6.540E-2
75 BC,JZ,5,1,1, 0,0.
76 BC,UZ,5,2,1, 0,0.
77 BC,UZ,5,3,1, 0,0.
78 BC,UZ,5,4,1, 0,0.
79 BC,UZ,5,5,1, 0,0.
80 BC,UZ,1,1,9, 6,-.215E-2
81 BC,UZ,1,2,9, 0,-.266E-2
82 BC,UZ,1,3,9, 8,-.347E-2
83 BC,UZ,1,4,9, 6,-.435E-2
84 BC,UZ,1,5,9, 6,-.482E-2
85 BC,JZ,2,1,9, 8,-.246E-2
86 BC,JZ,2,3,9, 6,-.290E-2
87 BC,UZ,2,5,9, 6,-.384E-2
88 BC,UZ,3,1,9, 6,-.184E-2
89 BC,UZ,3,2,9, 8,-.246E-2
90 BC,JZ,3,3,9, 6,-.257E-2
91 BC,UZ,3,4,9, 8,-.317E-2
92 BC,JZ,3,5,9, 0,-.341E-2
93 BC,UZ,4,1,9, 0,-.148E-2
94 BC,UZ,4,3,9, 8,-.194E-2
95 BC,UZ,4,5,9, 8,-.236E-2
96 BC,UZ,5,1,9, 0,-.13E-2
97 BC,UZ,5,2,9, 0,-.13E-2
98 BC,JZ,5,3,9, 8,-.153E-2
99 BC,UZ,5,4,9, 6,-.153E-2
100 BC,UZ,5,5,9, 8,-.153E-2
101 CND,ELEMENTS
102 SU,V6
103 PJST
104 BLOCK
105 OPTION,2
106 CND,POST
107 REZONE,1,1,5, 3,3,9
108 REZONE,GRADS,1,1,5, 2,2,2
109 REZONE,GRADS,1,1,7, 2,2,2
110 BC,REZONE,1,1,5, 2,2,2,2,2, 1,1,5
111 BC,REZONE,1,1,7, 2,2,2,2,2, 1,1,9
112 BC,PRESSURE,1,1,5, 4,1,-2563
113 BC,PRESSURE,1,1,7, 4,1,-2563
114 REPOS,REZONE,1,1,5
115 REPOS,REZONE,1,1,7
116 CND,CONTROL
117 POINT,1,1,2,5, 2.648,233,1.942
118 POINT,1,1,3,5, 1.815,33,1.942
119 END,SET
120 POINT,1,1,2,1, 2.648,233,1.942
121 POINT,1,1,3,1, 1.815,33,1.942
122 POINT,1,1,2,2, 2.648,233,2.06
123 POINT,1,1,3,2, 1.815,33,2.06
124 POINT,1,1,2,3, 2.648,233,2.17
125 POINT,1,1,3,3, 1.815,33,2.17
126 POINT,1,1,2,4, 2.648,233,2.29
127 POINT,1,1,3,4, 1.815,33,2.29
128 POINT,1,1,2,5, 2.648,233,2.29

```



```

129 POINT,1,1,3,5, 1.0,5,.33,2,4,5
130 END,SET
131 SO,VE
132 POST
133 BLOCK
134 OPTION,2
135 END,POST
136 REZONE,1,1,7, 3,3,11
137 RE,TIME,GAUSS,1,1,7, 2,2,2
138 RE,TIME,GAUSS,1,1,9, 2,2,2
139 RE,TIME,GAUSS,1,1,7, 2,2,2,2,2, 1,1,7
140 RE,TIME,GAUSS,1,1,9, 2,2,2,2,2,2, 1,1,11
141 END,CONTROL
142 SO,VE
143 POST
144 BLOCK
145 OPTION,2
146 END,POST
147 STOP

```

TIME IN FFLOSD 1.141 SECONDS

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS
 FIRST SECOND THIRD
 ELEMENT POINT STRESS ELEMENT POINT STRESS ELEMENT POINT STRESS
 I J K NO. I J K NO. I J K NO.

MATERIAL NUMBER = 1												
SIGMA MAX	1	1	1	1	1	1	1	1	1	1	1	1
SIGMA MIN	3	1	1	20	-1.03E+00	3	1	1	21	-1.60E+00	3	3
TAU MAX	1	1	1	73	.276E+03	1	1	3	61	.276E+03	1	1
EPS MAX	1	1	1	1	.23E+01	1	1	1	5	.231E+01	1	1
EPS MIN	1	1	1	73	-.232E+01	1	1	3	61	-.232E+01	1	1
GAMMA MAX	1	1	1	73	.035E+01	1	1	3	61	.035E+01	1	1
MATERIAL NUMBER = 2												
SIGMA MAX	5	3	7	209	.851E+05	5	3	7	216	.807E+05	5	3
SIGMA MIN	5	1	7	203	-.112E+05	5	1	7	206	-.127E+05	5	1
TAU MAX	5	3	1	154	.290E+05	5	3	1	157	.200E+05	5	3
EPS MAX	5	3	1	156	.170E+02	5	3	7	216	.177E+02	5	3
EPS MIN	5	1	7	203	-.032E+03	5	1	7	199	-.003E+03	5	3
GAMMA MAX	5	3	1	154	.252E+02	5	3	1	157	.251E+02	5	3
MATERIAL NUMBER = 3												
SIGMA MAX	1	1	1	1	1	1	1	1	1	1	1	1
SIGMA MIN	3	1	1	20	-1.03E+00	3	1	1	21	-1.60E+00	3	3
TAU MAX	1	1	1	73	.276E+03	1	1	3	61	.276E+03	1	1
EPS MAX	1	1	1	1	.23E+01	1	1	1	5	.231E+01	1	1
EPS MIN	1	1	1	73	-.232E+01	1	1	3	61	-.232E+01	1	1
GAMMA MAX	1	1	1	73	.035E+01	1	1	3	61	.035E+01	1	1

TIME IN POST = 3.153 SECONDS
 MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16
 MAXIMUM DIMENSION OF REFINED GRID = 1331
 MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 13

COARSE GRID ELEMENT = 1												
MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD
1	50101	139E+01	0	.128E+01	.128E+01	.128E+01	11	5032	139E+01	0	.128E+01	.128E+01
2	50103	139E+01	0	.128E+01	.128E+01	.128E+01	12	5021	139E+01	0	.128E+01	.128E+01
3	50105	139E+01	0	.128E+01	.128E+01	.128E+01	13	60101	139E+01	0	.128E+01	.128E+01
4	50107	139E+01	0	.128E+01	.128E+01	.128E+01	14	60103	139E+01	0	.128E+01	.128E+01
5	70101	215E+01	0	.194E+01	.194E+01	.194E+01	15	60303	139E+01	0	.128E+01	.128E+01
6	70103	215E+01	0	.194E+01	.194E+01	.194E+01	16	60305	139E+01	0	.128E+01	.128E+01
7	70105	215E+01	0	.194E+01	.194E+01	.194E+01	17	70102	222E+01	0	.194E+01	.194E+01
8	70107	215E+01	0	.194E+01	.194E+01	.194E+01	18	70203	217E+01	0	.194E+01	.194E+01
9	50102	139E+01	0	.128E+01	.128E+01	.128E+01	19	70302	167E+01	0	.194E+01	.194E+01
10	50205	139E+01	0	.128E+01	.128E+01	.128E+01	20	70201	180E+01	0	.194E+01	.194E+01
COARSE GRID ELEMENT = 13												
MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD
1	50101	139E+01	0	.128E+01	.128E+01	.128E+01	11	5032	139E+01	0	.128E+01	.128E+01
2	50103	139E+01	0	.128E+01	.128E+01	.128E+01	12	5021	139E+01	0	.128E+01	.128E+01
3	50105	139E+01	0	.128E+01	.128E+01	.128E+01	13	60101	139E+01	0	.128E+01	.128E+01
4	50107	139E+01	0	.128E+01	.128E+01	.128E+01	14	60103	139E+01	0	.128E+01	.128E+01
5	70101	215E+01	0	.194E+01	.194E+01	.194E+01	15	60303	139E+01	0	.128E+01	.128E+01
6	70103	215E+01	0	.194E+01	.194E+01	.194E+01	16	60305	139E+01	0	.128E+01	.128E+01
7	70105	215E+01	0	.194E+01	.194E+01	.194E+01	17	70102	222E+01	0	.194E+01	.194E+01
8	70107	215E+01	0	.194E+01	.194E+01	.194E+01	18	70203	217E+01	0	.194E+01	.194E+01
9	50102	139E+01	0	.128E+01	.128E+01	.128E+01	19	70302	167E+01	0	.194E+01	.194E+01
10	50205	139E+01	0	.128E+01	.128E+01	.128E+01	20	70201	180E+01	0	.194E+01	.194E+01

NO.	NAME	SCORE	SCORE	SCORE	NO.	NAME	SCORE	SCORE	SCORE
1	70101	.215E+01	..	.19E+01	11	70102	.167E+01	.409E+00	.19E+01
2	70103	.230E+01	0.	.19E+01	12	70201	.100E+01	.30E+00	.19E+01
3	70303	.109E+01	.0-0E+0J	.19E+01	13	00101	.215E+01	0.	.217E+01
4	70301	.10E+01	.330E+0J	.19E+01	14	00103	.236E+01	0.	.217E+01
5	90101	.215E+01	0.	.21E+01	15	00303	.107E+01	.632E+00	.217E+01
6	90103	.236E+01	0.	.21E+01	16	00301	.146E+01	.330E+00	.217E+01
7	90303	.13E+01	.612E+0J	.21E+01	17	90102	.222E+01	0.	.24E+01
8	90301	.14E+01	.330E+0J	.21E+01	18	90203	.215E+01	.391E+00	.24E+01
9	70102	.222E+01	0.	.19E+01	19	90102	.16E+01	.40E+00	.24E+01
10	70203	.217E+01	.390E+0J	.19E+01	20	90201	.100E+01	.30E+00	.24E+01

ELEMENT SUMMARY REPORT THREE MOST HIGHLY STRESSED ELEMENTS FIRST SECOND THIRD ELEMENT POINT STRESS ELEMENT POINT STRESS ELEMENT POINT STRESS I J K NO. I J K NO. I J K NO.

MATERIAL NUMBER = 1															
SIGMA MAX	3	1	11	123	0.251E+00	1	3	11	164	0.121E+00	3	1	3	30	0.011E+00
SIGMA MIN	1	3	11	107	-0.011E+00	1	1	11	86	-0.011E+00	1	1	1	07	-0.011E+00
TAU MAX	1	3	9	95	0.151E+03	1	3	11	166	0.730E+03	1	3	11	166	0.361E+03
EPS MAX	1	3	9	95	0.651E+01	1	3	11	160	0.261E+01	1	3	1	166	0.321E+01
EPS MIN	1	3	11	100	-0.621E+01	1	3	9	95	-0.021E+01	1	1	3	1	-0.261E+01
GAMMA MAX	1	3	9	95	0.121E+00	1	3	11	168	0.111E+00	1	3	11	166	0.371E+01

TIME IN POST = 2.667 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16

MAXIMUM DIMENSION OF REFINING GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 13

COARSE GRID ELEMENT = 2																	
MODE			K	J	I	X-COORD	Y-COORD	Z-COORD	MODE			K	J	I	X-COORD	Y-COORD	Z-COORD
1	70101	198E+01	..	..	..	153E+01	..	..	11	70102	176E+01	..	..	..	297E+00	195E+01
2	70103	222E+01	..	..	..	153E+01	..	..	12	70201	179E+01	..	..	..	163E+00	195E+01
3	70303	198E+01	..	..	..	153E+01	..	..	13	80101	262E+01	..	..	..	174E+01	195E+01
4	70303	198E+01	..	..	..	153E+01	..	..	14	80103	213E+01	..	..	..	175E+01	195E+01
5	90101	219E+01	..	..	..	153E+01	..	..	15	80103	195E+01	..	..	..	175E+01	195E+01
6	90103	222E+01	..	..	..	153E+01	..	..	16	80101	170E+01	..	..	..	175E+01	195E+01
7	90103	203E+01	..	..	..	153E+01	..	..	17	90102	218E+01	..	..	..	194E+01	194E+01
8	90101	198E+01	..	..	..	153E+01	..	..	18	90203	214E+01	..	..	..	194E+01	194E+01
9	70102	198E+01	..	..	..	153E+01	..	..	19	90102	195E+01	..	..	..	226E+00	194E+01
10	70103	198E+01	..	..	..	153E+01	..	..	20	90201	205E+01	..	..	..	233E+00	194E+01

COARSE GRID ELEMENT = 3													
MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD	Z-COORD
1	90101	215E+01	..	..	..	..	11	90102	195E+01	..	..	326E+06	194E+01
2	90103	222E+01	..	..	..	..	12	90101	205E+01	..	..	233E+06	198E+01
3	90103	222E+01	..	..	..	..	13	100101	215E+01	..	..	..	206E+01
4	90101	198E+01	..	..	..	..	14	100103	222E+01	..	..	..	206E+01
5	110101	215E+01	..	..	..	..	15	100103	205E+01	..	..	347E+00	206E+01
6	110103	222E+01	..	..	..	..	16	100101	218E+01	..	..	336E+06	206E+01
7	110103	215E+01	..	..	..	..	17	110102	214E+01	..	..	217E+01	217E+01
8	110101	198E+01	..	..	..	..	18	110103	214E+01	..	..	204E+06	217E+01
9	90102	218E+01	..	..	..	..	19	110102	205E+01	..	..	213E+06	217E+01
10	90103	215E+01	..	..	..	..	20	110101	215E+01	..	..	..	217E+01

ELEMENT SUMMARY REPORT

THREE 4051 MIMELY STR-3 SID ELEMENTS
 FIRST-SECOND-THIRD
 ELEMENT POINT STRESS ELEMENT POINT STRESS ELEMENT POINT STRESS
 I J K NO. I J K NO. I J K NO.

MATERIAL NUMBER :

SIGMA MAX	1	4	3	89	0.000000	1	3	3	104	0.000000	3	1	3	124	0.000000
SIGMA MIN	1	3	7	26	-0.000000	1	1	3	86	-0.000000	3	1	3	123	-0.000000
TAU MAX	3	1	3	120	0.000000	3	1	1	115	0.000000	3	3	3	132	0.000000
EPS MAX	3	3	9	69	0.000000	3	1	9	52	0.000000	3	1	1	115	0.000000
EPS MIN	3	1	3	124	-0.000000	3	3	3	137	-0.000000	3	1	1	115	-0.000000
GAMMA MAX	3	1	3	124	0.000000	3	1	1	115	0.000000	3	3	3	137	0.000000

TIME IN POST = 2.000 S.C.MOS
 TIME IN STOP = 122.537 S.C.MOS

```

VICOM SCOPE 3.4.2 MM SN 48 MM R.D 10.97
15.51.43. MM1KPGH FROM /KP
15.51.43. IP 13.1672 MORDS - FILE INPUT , 33 43
15.51.44. MM1KP, T100J, CM26660, L1000.
15.51.44.
15.51.44. 3F35K1FF05 7206 A3 MACKETT 0H01 000106
15.51.45. LIMIT(1000)
15.51.45.
15.51.45. ATTACH(TEX30, KPXXXXM, ID=KPXXX, CY=3, M2=1)
15.51.45.
15.51.45. DISPOSE(OUTPUT, *PK=C)
15.51.46.
15.51.46. LOSEI(PRES=T=ZLXJ)
15.51.46.
15.51.46. TEX30.
15.51.46.
10.05.15. NON-FATAL ERROR(S) IN OVERLAY GEN.
10.31.45. LOCKIN.
10.32.30. UNLOCK.
10.35.10. STOP
10.35.10. 122.501 CP SECONDS EXECUTION TIME
10.35.10. EXIT.
10.35.10.
10.35.10. 3P 00007720 MORDS - FILE OUTPUT , 33 43
10.35.10. 45 0.920 MORDS ( 34704 MAX USE)
10.35.10. CPA 129.764 SEC. 115.745 ADJ.
10.35.10. IO 141.122 SEC. 73.833 ADJ.
10.35.10. CM 13009.419 KMS. 137.464 ADJ.
10.35.10. PP 271.880 SEC. DATE: 11/26/77
10.35.10. EJ END OF JOB, KP

```

LINE DIRECT LIST OF INPUT DATA

```

1 SPINOCYL - STAR TO CYLINDRICAL BORE TRANSITION (I)
2 SETUP,4,PRESCHW
3 ISO,PROPELLANT,1..7E3..499..-013245
4 ISO,CASE,2,3,E7..3
5 END,MATERIALS
6 BLOCK-C,1, 1,1,1, 9,9,9, 7..5 8 PROPELLANT NODES
7 .94,0.0, 2.447,0.0, 1.736,1.730,0, .665,.665,0/
8 .94,0,.463, 2.447,0,.463, 1.730,1.730,.463, .665,.665,.463
9 10,2.430,.651,0, 12,.814,.470,3- 1,2.430,.651,.463, 20,.814,.470,.463/
10 22,2.100,1.250,0, 24,.900,.243,5, 30,2.100,1.250,.463, 32,.900,.243,.463
11 BLOCK-C,1, 1,1,3, 5,5,7, 7..5 8 PROPELLANT NODES
12 .94,0,.463, 2.447,0,.463, 1.730,1.730,.463, .665,.665,.463/
13 2.145,0,1.942, 2.447,0,1.942, 1.730,1.730,1.942, .665,.665,1.942
14 10,2.430,.651,.463, 12,.814,.470,.463, 13,1.31,0,.973/
15 10,2.430,.651,1.942, 20,1.15,.33,1.942, 22,2.100,1.250,.463/
16 24,.900,.243,.463, 25,1.775,0,1.432, 30,2.100,1.250,1.942/
17 32,1.75,.33,1.942
18 BLOCK-C,1, 1,1,1, 9,9,9, 7..5 8 PROPELLANT NODES
19 2.145,0,1.942, 2.447,0,1.942, 1.730,1.730,1.942, .665,.665,1.942/
20 2.145,0,2.405, 2.447,0,2.405, 1.730,1.730,2.405, .665,.665,2.405
21 10,2.430,.651,1.942, 12,1.15,.33,1.942, 10,2.430,.651,2.405, 20,1.15,.33,2.405/
22 22,2.100,1.250,1.942, 24,1.75,.33,1.942, 30,2.100,1.250,2.405, 32,1.75,.33,2.405
23 BLOCK,2, 5,1,1, 7,5,3 8 CASE NODES
24 2.447,0,0,2.517,0,0,2.517,45,0,2.447,45,3/
25 2.447,0,.463,2.517,0,.463,2.517,45,.463,2.447,45,.463
26 BLOCK,2, 5,1,3, 7,5,7 8 CASE NODES
27 2.447,0,.463,2.517,0,.463,2.517,45,.463,2.447,45,.463/
28 2.447,0,1.942,2.517,0,1.942,2.517,45,1.942,2.447,45,1.942
29 BLOCK,2, 5,1,7, 7,5,9 8 CASE NODES
30 2.447,0,1.942,2.517,0,1.942,2.517,45,1.942,2.447,45,1.942/
31 2.447,0,2.405,2.517,0,2.405,2.517,45,2.405,2.447,45,2.405
32 END,GRID
33 KLOOP,4
34 ILOOP,2
35 JLOOP,2
36 ORIGIN,1, 1,1,1 8 PROPELLANT ELEMENTS
37 JEND
38 IEND
39 KEND
40 KLOOP,4
41 JLOOP,2
42 ORIGIN,2, 5,1,1 8 CASE ELEMENTS
43 JEND
44 KEND
45 KLOOP,4
46 ILOOP,3
47 BC,SLOPE,1,1,1, 5 8 0 DEGREE FACE
48 BC,SLOPE,1,3,1, 2 8 45 DEGREE FACE
49 IEND
50 KEND
51 JLOOP,2
52 BC,SLOPE,4,1,1, 6 8 END OF CASE
53 JEND
54 BC,UZ,1,1,1, 0,-7.305E-2
55 BC,UZ,1,2,1, 0,-7.305E-2
56 BC,UZ,1,3,1, 0,-7.305E-2
57 BC,UZ,1,4,1, 0,-7.305E-2
58 BC,UZ,1,5,1, 0,-7.305E-2
59 BC,UZ,2,1,1, 0,-5.530E-2
60 BC,UZ,2,3,1, 0,-5.530E-2
61 BC,UZ,2,5,1, 0,-5.530E-2
62 BC,UZ,2,7,1, 0,-5.530E-2

```

```

63 BC,UZ,3,2,1, 0,-3.692E-2
64 BC,UZ,3,3,1, 0,-3.692E-2
65 BC,UZ,3,4,1, 0,-3.692E-2
66 BC,UZ,3,5,1, 0,-3.692E-2
67 BC,UZ,4,1,1, 0,-1.846E-2
68 BC,UZ,4,3,1, 0,-1.846E-2
69 BC,UZ,4,5,1, 0,-1.846E-2
70 BC,UZ,5,1,1, 0,0
71 BC,UZ,5,2,1, 0,0
72 BC,UZ,5,3,1, 0,0
73 BC,UZ,5,4,1, 0,0
74 BC,UZ,5,5,1, 0,0
75 BC,UZ,1,1,9, 0,-.577E-2
76 BC,UZ,1,2,9, 0,-.799E-2
77 BC,UZ,1,3,9, 0,-1.836E-2
78 BC,UZ,1,4,9, 0,-1.332E-2
79 BC,UZ,1,5,9, 0,-1.436E-2
80 BC,UZ,2,1,9, 0,-.529E-2
81 BC,UZ,2,3,9, 0,-.859E-2
82 BC,UZ,2,5,9, 0,-1.109E-2
83 BC,UZ,3,1,9, 0,-.478E-2
84 BC,UZ,3,2,9, 0,-.598E-2
85 BC,UZ,3,3,9, 0,-.723E-2
86 BC,UZ,3,4,9, 0,-.932E-2
87 BC,UZ,3,5,9, 0,-1.819E-2
88 BC,UZ,4,1,9, 0,-.414E-2
89 BC,UZ,4,3,9, 0,-.522E-2
90 BC,UZ,4,5,9, 0,-.638E-2
91 BC,UZ,5,1,9, 0,-.362E-2
92 BC,UZ,5,2,9, 0,-.362E-2
93 BC,UZ,5,3,9, 0,-.362E-2
94 BC,UZ,5,4,9, 0,-.362E-2
95 BC,UZ,5,5,9, 0,-.362E-2
96 END,ELEMENTS
97 SOLVE
98 POST
99 BLOCK
100 OPTION,2
101 END,POST
102 REZONE,1,1,3, 3,3,9
103 REFIN,GRADS,1,1,3, 2,2,2
104 BCR,REZONE,1,1,3, 2,2,2,2,2,2, 1,1,3
105 END,CONTROL
106 SOLVE
107 POST
108 BLOCK
109 OPTION,2
110 END,POST
111 REZONE,1,1,3, 3,3,5
112 REFIN,GRADS,1,1,3, 2,2,2
113 BCR,REZONE,1,1,3, 2,2,2,2,2,2, 1,1,3
114 END,CONTROL
115 SOLVE
116 POST
117 BLOCK
118 OPTION,2
119 END,POST
120 STOP

TIME IN FFLOS8 = .843 SECONDS

```


0 1 5 5 3 4 1 5 A 7 6 4 1 4 4 5 0 6 3 2 6 4

TIME IN PAST									
MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16									
MAXIMUM DIMENSION OF DEFINED GRID = 1331									
MAXIMUM NUMBER OF GRID POINTS IN ANY ONE SECTION = 13									
COARSE GRID ELEMENT = 5									
MODE	C	I	I	Y-COORD	Z-COORD	MODE	C	I	I
1	10111	1	1	1	1	1	10111	1	1
2	10112	1	1	1	1	1	10112	1	1
3	10113	1	1	1	1	1	10113	1	1
4	10114	1	1	1	1	1	10114	1	1
5	10115	1	1	1	1	1	10115	1	1
6	10116	1	1	1	1	1	10116	1	1
7	10117	1	1	1	1	1	10117	1	1
8	10118	1	1	1	1	1	10118	1	1
9	10119	1	1	1	1	1	10119	1	1
10	10120	1	1	1	1	1	10120	1	1

THREE MOST HIGHLY STRESSED ELEMENTS

TIME IN POST • 1.111 SECONDS

~~MAXIMUM NUMBER OF COARSE OR IO ELEMENTS POSSIBLE = 10~~

MAXIMUM DIMENSION OF REFINED GRID - 1331

MAXIMUM NUMBER OF GAO POINTS IN ANY ONE DIRECTION = 15

106

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS
 FIRST POINT STRESS SECOND POINT STRESS THIRD POINT STRESS
 ELEMENT I ELEMENT J ELEMENT K ELEMENT L ELEMENT M ELEMENT N
 ELEMENT NO. POINT NO. POINT NO. POINT NO. POINT NO. POINT NO. POINT NO.

MATERIAL NUMBER = 1

SIGMA MAX	3	3	3	57	678E+04	3	3	5	70	296E+04	3	1	3	62	278E+04
SIGMA MIN	1	3	5	15	-379E+04	1	1	5	14	-132E+04	1	3	3	21	-189E+04
TAU MAX	1	3	5	35	968E+02	1	1	5	13	334E+02	1	3	3	20	834E+02
EPS MAX	3	3	3	59	288E+00	1	1	3	1	197E+00	3	3	3	64	102E+00
EPS MIN	1	3	5	35	-224E+00	1	1	5	13	-174E+00	1	3	3	20	-174E+00
GAMMA MAX	1	3	5	35	615E+00	1	1	5	13	357E+00	1	3	3	20	357E+00

TIME IN POST = 1.189 SECONDS

TIME IN STOP = 85.943 SECONDS

```

NICON SCOPE 3.4.2 MM SM 48 MM R.D 16.27
19.29.06.HM2KPM FROM /KP
19.29.06.IP 0000076 WORDS - FILE INPUT , DC 00
19.29.06.HM2KPM.Y1000.CH200000.L1000.
19.29.06.FE41K10M05 7200 A3 MACKETT 0M01
19.29.06.LIMIT(1000)
19.29.06.ATTACH(TEX30,KPXXXXM,IO=KPXXX,CY=3,HR=1)
19.29.06.DISPOSE(OUTPUT,"PRCT")
19.42.31.LDSET(PRESET=ZERO)
19.46.29.TEX30.
16.32.37. NON-FATAL ERROR(S) IN OVERLAY GEN.
19.44.18. STOP
19.44.18. 05.591 CP SECONDS EXECUTION TIME
19.44.18.EXIT.
19.44.18.OP 00042000 WORDS - FILE OUTPUT , DC 40
19.44.18.M3 43000 WORDS ( 330000 MAX USED)
19.44.18.CPA 92.547 SEC. 81.381 ADJ.
19.44.18.IO 96.194 SEC. 84.400 ADJ.
19.44.18.CM 9390.425 KMS. 97.103 ADJ.
19.44.18.PP 192.357 SEC. DATE 10/10/77
19.44.18.EJ END OF JOB, KP

```


MODEL II

The finite element model II is shown in Figure 5. It was analyzed for both pressure and thermal loading. The TEXGAP-3D computer input and output is shown on the following pages.

Pressure Loading - Firing at -65°F

Propellant	Case
$E_p = 19,000 \text{ psi}$ $\nu_p = 0.499$	$E_c = 3 \times 10^7 \text{ psi}$ $\nu_c = 0.3$

pressure = 1425 psi

Corresponding end displacements are shown on computer input and referenced to Figure 6.

Thermal Loading (2 Weeks Storage at -65°F)

Propellant	Case
$E_p = 700 \text{ psi}$ $\nu_p = 0.499$ $\alpha_p = 0.000089 \text{ in/in/}^{\circ}\text{F}$	$E_c = 3 \times 10^7 \text{ psi}$ $\nu_c = 0.3$

$T_o = 140^{\circ}\text{F}$

Corresponding end displacements are shown on computer input and referenced to Figure 6.

The results of two analyses on Model II are shown on the following computer output sheets:

- 1) pressure loading with two sequential rezoning computations, without any repositioning of element nodal points;
- 2) thermal loading with two sequential rezoning computations, without any repositioning of element nodal points.

The first analysis, with rezoning near the cylindrical bore end of the transition (see Figure 5), yielded a maximum strain of 0.0260 in element 113 (IJK). The second analysis, with rezoning near the cylindrical bore end, yielded a maximum strain of 0.235 in element 113.

The following results consist of abbreviated computer output for both the first and second analyses. The first analysis is contained on pages 111 thru 124; the second analysis is contained on pages 125 thru 131.

LINE DIRECT LIST OF INPUT DATA

```

1 SFINOCYL - STAR TO CYLINDRICAL BORE TRANSITION (III)
2 SETUP,4,PRESCHU
3 ISO,PROPELLANT,1,1.944,.499
4 ISO,CASE,2,3.E7,.3
5 END,MATERIALS
6 BLOCK-C,1, 1,1,1, 9,3,3 SPROPELLANT NODES
7 .94,0.0, 2.447,0.0, 2.291,.06,0. .00,.33,0/
8 .94,0.0,.463, 2.447,0.0,.463, 2.291,.06,.463, .00,.33,.463/
9 10,2.430,.292,0, 12,.913,.223,0, 10,2.430,.292,.463, 20,.913,.223,.463/
10 22,2.377,.500,0, 24,.933,.112,0, 30,2.377,.500,.463, 32,.933,.112,.463/
11 BLOCK-C,1, 1,3,1, 5,5,3 SPROPELLANT NODES
12 .00,.33,0, 2.291,.06,0, 1.730,1.730,0, .00,.009,0/
13 .00,.33,.463, 2.291,.06,.463, 1.730,1.730,.463, .00,.009,.463/
14 10,2.150,1.170,0, 12,.752,.559,0, 10,2.150,1.170,.463, 20,.752,.559,.463/
15 22,1.950,1.457,0, 24,.825,.452,0, 30,1.950,1.457,.463, 32,.825,.452,.463/
16 BLOCK-C,1, 1,1,3, 9,3,7 SPROPELLANT NODES
17 .94,0.0,.463, 2.447,0.0,.463, 2.291,.06,.463, .00,.33,.463/
18 2,149,0,1.942, 2.447,0,1.942, 2.291,.06,1.942, .00,.33,1.942/
19 10,2.430,.292,.463, 12,.913,.223,.463, 13,1.39,0,.963/
20 10,2.430,.292,1.942, 20,1.403,.33,1.942, 22,2.377,.500,.463/
21 24,.933,.112,.463, 25,1.79,0,1.363, 30,2.377,.500,1.942/
22 30,1.09,.33,1.942/
23 BLOCK-C,1, 1,3,3, 5,5,7 SPROPELLANT NODES
24 .00,.33,.463, 2.291,.06,.463, 1.730,1.730,.463, .009,.009,.463/
25 .00,.33,1.942, 2.291,.06,1.942, 1.730,1.730,1.942, .009,.009,1.942/
26 10,2.150,1.170,.463, 12,.752,.559,.463, 10,2.150,1.170,1.942/
27 20,.752,.559,1.942, 22,1.950,1.457,.463, 24,.825,.452,.463/
28 30,1.950,1.457,1.942, 32,.825,.452,1.942/
29 BLOCK-C,1, 1,1,7, 5,3,9 SPROPELLANT NODES
30 2,149,0,1.942, 2.447,0,1.942, 2.291,.06,1.942, .00,.33,1.942/
31 2,149,0,2.405, 2.447,0,2.405, 2.291,.06,2.405, .00,.33,2.405/
32 10,2.430,.292,1.942, 12,1.403,.33,1.942, 10,2.430,.292,2.405/
33 20,1.403,.33,2.405, 22,2.377,.500,1.942, 24,1.09,.33,1.942/
34 30,2.377,.500,2.405, 32,1.09,.33,2.405/
35 BLOCK-C,1, 1,3,7, 5,5,9 SPROPELLANT NODES
36 .00,.33,1.942, 2.291,.06,1.942, 1.730,1.730,1.942, .009,.009,1.942/
37 .00,.33,2.405, 2.291,.06,2.405, 1.730,1.730,2.405, .009,.009,2.405/
38 10,2.150,1.170,1.942, 12,.752,.559,1.942, 10,2.150,1.170,2.405/
39 20,.752,.559,2.405, 22,1.950,1.457,1.942, 24,.825,.452,1.942/
40 30,1.950,1.457,2.405, 32,.825,.452,2.405/
41 BLOCK,2, 5,1,1, 7,3,3 SCASE NODES
42 2.447,0.0, 2.517,0.0, 2.517,20.56,0, 2.447,20.56,0/
43 2.447,0.0,.463, 2.517,0.0,.463, 2.517,20.56,.463, 2.447,20.56,.463/
44 BLOCK,2, 5,3,1, 7,5,3 SCASE NODES
45 2.447,20.56,0, 2.517,20.56,0, 2.517,45,0, 2.447,45,0/
46 2.447,20.56,.463, 2.517,20.56,.463, 2.517,45,.463, 2.447,45,.463/
47 BLOCK,2, 5,1,3, 7,3,7 SCASE NODES
48 2.447,0.0,.463, 2.517,0.0,.463, 2.517,20.56,.463, 2.447,20.56,.463/
49 2.447,0.0,1.942, 2.517,0.0,1.942, 2.517,20.56,1.942, 2.447,20.56,1.942/
50 BLOCK,2, 5,3,3, 7,5,7 SCASE NODES
51 2.447,20.56,.463, 2.517,20.56,.463, 2.517,45,.463, 2.447,45,.463/
52 2.447,20.56,1.942, 2.517,20.56,1.942, 2.517,45,1.942, 2.447,45,1.942/
53 BLOCK,2, 5,1,7, 7,3,9 SCASE NODES
54 2.447,0,1.942, 2.517,0,1.942, 2.517,20.56,1.942, 2.447,20.56,1.942/
55 2.447,0,2.405, 2.517,0,2.405, 2.517,20.56,2.405, 2.447,20.56,2.405/
56 BLOCK,2, 5,3,7, 7,5,9 SCASE NODES
57 2.447,20.56,1.942, 2.517,20.56,1.942, 2.517,45,1.942, 2.447,45,1.942/
58 2.447,20.56,2.405, 2.517,20.56,2.405, 2.517,45,2.405, 2.447,45,2.405/
59 END,GRID
60 KLOOP,4
61 ILOOP,2

```

```

63 BRICK,1, 1,1,1 8 PROPELLANT ELEMENTS
64 JEND
65 IEND
66 KEND
67 KLOOP,4
68 JLOOP,2
69 BRICK,2, 5,1,1 8 CASE ELEMENTS
70 JEND
71 KEND
72 KLOOP,4
73 ILOOP,3
74 BC,SLOPE,1,1,1, 5 8 8 DEGREE FACE
75 BC,SLOPE,1,3,1, 2 8 45 DEGREE FACE
76 IEND
77 KEND
78 JLOOP,2
79 BC,SLOPE,5,1,1, 6 8 END OF CASE
80 JEND
81 KLOOP,4
82 JLOOP,2
83 BC,PRESSURE, 1,1,1, 4,1.429E3 8 1429 PSI PRESSURE
84 JEND
85 KEND
86 BC,UZ,1,1,1, 0,-2.104E-2
87 BC,UZ,1,2,1, 0,-2.104E-2
88 BC,UZ,1,3,1, 0,-2.104E-2
89 BC,UZ,1,4,1, 0,-2.104E-2
90 BC,UZ,1,5,1, 0,-2.104E-2
91 BC,UZ,2,1,1, 0,-1.630E-2
92 BC,UZ,2,3,1, 0,-1.630E-2
93 BC,UZ,2,5,1, 0,-1.630E-2
94 BC,UZ,3,1,1, 0,-1.092E-2
95 BC,UZ,3,2,1, 0,-1.092E-2
96 BC,UZ,3,3,1, 0,-1.092E-2
97 BC,UZ,3,4,1, 0,-1.092E-2
98 BC,UZ,3,5,1, 0,-1.092E-2
99 BC,UZ,4,1,1, 0,-0.546E-2
100 BC,UZ,4,3,1, 0,-0.546E-2
101 BC,UZ,4,5,1, 0,-0.546E-2
102 BC,UZ,5,1,1, 0,0.
103 BC,UZ,5,2,1, 0,0.
104 BC,UZ,5,3,1, 0,0.
105 BC,UZ,5,4,1, 0,0.
106 BC,UZ,5,5,1, 0,0.
107 BC,UZ,1,1,9, 0,-.215E-2
108 BC,UZ,1,2,9, 0,-.399E-2
109 BC,UZ,1,3,9, 0,-.462E-2
110 BC,UZ,1,4,9, 0,-.462E-2
111 BC,UZ,1,5,9, 0,-.462E-2
112 BC,UZ,2,1,9, 0,-.200E-2
113 BC,UZ,2,3,9, 0,-.304E-2
114 BC,UZ,2,5,9, 0,-.504E-2
115 BC,UZ,3,1,9, 0,-.104E-2
116 BC,UZ,3,2,9, 0,-.230E-2
117 BC,UZ,3,3,9, 0,-.341E-2
118 BC,UZ,3,4,9, 0,-.341E-2
119 BC,UZ,3,5,9, 0,-.341E-2
120 BC,UZ,4,1,9, 0,-.100E-2
121 BC,UZ,4,3,9, 0,-.230E-2
122 BC,UZ,4,5,9, 0,-.230E-2
123 BC,UZ,5,1,9, 0,-.153E-2
124 BC,UZ,5,2,9, 0,-.153E-2
125 BC,UZ,5,3,9, 0,-.153E-2
126 BC,UZ,5,4,9, 0,-.153E-2
127 BC,UZ,5,5,9, 0,-.153E-2

```


400 END ELEMENTS

129 SOLVE

130 POST

131 BLOCK

132 OPTION, 2

133 END, POST

134 REZONE, 1, 1, 3, 3, 3, 5

135 REZONE, GRADS, 1, 1, 3, 2, 2, 2

136 OCR, REZONE, 1, 1, 3, 2, 2, 2, 2, 2, 1, 1, 3

137 END, CONTROL

138 SOLVE

139 POST

140 BLOCK

141 OPTION, 2

142 END, POST

143 REZONE, 1, 1, 3, 3, 3, 5

144 REZONE, GRADS, 1, 1, 3, 2, 2, 2

145 OCR, REZONE, 1, 1, 3, 2, 2, 2, 2, 2, 1, 1, 3

146 END, CONTROL

147 SOLVE

148 POST

149 BLOCK

150 OPTION, 2

151 END, POST

152 STOP

TIME IN FFLOSB = 1.132 SECONDS

[illegible]

ELEMENT NO.	TYPE	MODES			MODAL POINT COORDINATES			MODAL POINT COORDINATES		
		I	J	K	X	Y	Z	X	Y	Z
11 BRICK MATERIAL NO. 1										
1	1	3	1	5	.282E+01	0.	.112E+01	.194E+01	.728E+00	.128E+01
2	1	5	1	5	.245E+01	0.	.128E+01	.186E+01	.348E+00	.194E+01
3	1	5	3	5	.229E+01	.859E+00	.128E+01	.217E+01	0.	.194E+01
4	1	5	3	5	.159E+01	.595E+00	.128E+01	.245E+01	0.	.157E+01
5	1	7	3	7	.238E+01	0.	.194E+01	.229E+01	.859E+00	.137E+01
6	1	7	5	7	.245E+01	0.	.194E+01	.198E+01	.595E+00	.157E+01
7	1	7	5	7	.229E+01	.859E+00	.194E+01	.245E+01	0.	.194E+01
8	1	7	5	7	.159E+01	.595E+00	.194E+01	.217E+01	0.	.194E+01
9	1	7	5	7	.229E+01	0.	.112E+01	.194E+01	.728E+00	.194E+01
10	1	7	5	7	.245E+01	.859E+00	.128E+01	.245E+01	.348E+00	.194E+01
12 BRICK MATERIAL NO. 1										
1	1	3	1	5	.159E+01	.595E+00	.128E+01	.186E+01	.348E+00	.128E+01
2	1	5	1	5	.229E+01	.859E+00	.128E+01	.217E+01	0.	.128E+01
3	1	5	3	5	.128E+01	.128E+01	.128E+01	.245E+01	.348E+00	.128E+01
4	1	5	3	5	.159E+01	.595E+00	.194E+01	.173E+01	.173E+01	.157E+01
5	1	7	3	7	.229E+01	.859E+00	.194E+01	.245E+01	.348E+00	.157E+01
6	1	7	5	7	.245E+01	.859E+00	.194E+01	.217E+01	0.	.194E+01
7	1	7	5	7	.229E+01	0.	.112E+01	.245E+01	.348E+00	.194E+01
8	1	7	5	7	.159E+01	.595E+00	.194E+01	.217E+01	0.	.194E+01
9	1	7	5	7	.229E+01	0.	.112E+01	.245E+01	.348E+00	.194E+01
10	1	7	5	7	.245E+01	.859E+00	.128E+01	.245E+01	.348E+00	.194E+01
13 BRICK MATERIAL NO. 1										
1	1	1	1	7	.212E+01	0.	.194E+01	.186E+01	.348E+00	.194E+01
2	1	1	1	7	.238E+01	0.	.194E+01	.217E+01	0.	.194E+01
3	1	1	1	7	.159E+01	.595E+00	.194E+01	.245E+01	.348E+00	.194E+01
4	1	1	1	7	.212E+01	0.	.194E+01	.217E+01	0.	.194E+01
5	1	1	1	7	.238E+01	0.	.194E+01	.245E+01	.348E+00	.194E+01
6	1	1	1	7	.159E+01	.595E+00	.194E+01	.217E+01	0.	.194E+01
7	1	1	1	7	.212E+01	0.	.194E+01	.245E+01	.348E+00	.194E+01
8	1	1	1	7	.238E+01	0.	.194E+01	.217E+01	0.	.194E+01
9	1	1	1	7	.159E+01	.595E+00	.194E+01	.245E+01	.348E+00	.194E+01
10	1	1	1	7	.212E+01	0.	.194E+01	.217E+01	0.	.194E+01
14 BRICK MATERIAL NO. 1										
1	1	3	1	7	.688E+00	.338E+00	.194E+01	.331E+00	.241E+00	.194E+01
2	1	3	1	7	.194E+01	.595E+00	.194E+01	.245E+01	.348E+00	.194E+01
3	1	3	1	7	.128E+01	.128E+01	.194E+01	.217E+01	0.	.194E+01
4	1	3	1	7	.688E+00	.338E+00	.194E+01	.331E+00	.241E+00	.194E+01
5	1	3	1	7	.194E+01	.595E+00	.194E+01	.245E+01	.348E+00	.194E+01
6	1	3	1	7	.128E+01	.128E+01	.194E+01	.217E+01	0.	.194E+01
7	1	3	1	7	.688E+00	.338E+00	.194E+01	.331E+00	.241E+00	.194E+01
8	1	3	1	7	.194E+01	.595E+00	.194E+01	.245E+01	.348E+00	.194E+01
9	1	3	1	7	.128E+01	.128E+01	.194E+01	.217E+01	0.	.194E+01
10	1	3	1	7	.688E+00	.338E+00	.194E+01	.331E+00	.241E+00	.194E+01
15 BRICK MATERIAL NO. 1										
1	1	3	1	7	.238E+01	0.	.194E+01	.245E+01	.348E+00	.194E+01
2	1	3	1	7	.245E+01	0.	.194E+01	.217E+01	0.	.194E+01
3	1	3	1	7	.229E+01	.859E+00	.194E+01	.245E+01	.348E+00	.194E+01
4	1	3	1	7	.159E+01	.595E+00	.194E+01	.217E+01	0.	.194E+01
5	1	3	1	7	.238E+01	0.	.194E+01	.245E+01	.348E+00	.194E+01
6	1	3	1	7	.245E+01	0.	.194E+01	.217E+01	0.	.194E+01
7	1	3	1	7	.229E+01	.859E+00	.194E+01	.245E+01	.348E+00	.194E+01
8	1	3	1	7	.159E+01	.595E+00	.194E+01	.217E+01	0.	.194E+01
9	1	3	1	7	.238E+01	0.	.194E+01	.245E+01	.348E+00	.194E+01
10	1	3	1	7	.245E+01	0.	.194E+01	.217E+01	0.	.194E+01

ELEMENT NO. TYPE	MODAL POINT COORDINATES X Y Z	MODAL POINT COORDINATES X Y Z	MODES I J K	MODAL POINT COORDINATES X Y Z	MODES I J K	MODAL POINT COORDINATES X Y Z
16 BRICK MATERIAL NO. 1			3 3 7	.159E+01 .599E+00 .199E+01	4 5 7	.165E+01 .165E+01 .199E+01
			5 3 7	.229E+01 .859E+00 .199E+01	4 5 7	.165E+01 .165E+01 .199E+01
			5 3 7	.173E+01 .173E+01 .199E+01	3 3 8	.159E+01 .599E+00 .217E+01
			5 5 7	.120E+01 .120E+01 .199E+01	3 3 8	.229E+01 .859E+00 .217E+01
			5 3 9	.199E+01 .599E+00 .241E+01	3 3 8	.173E+01 .173E+01 .217E+01
			5 3 9	.229E+01 .859E+00 .241E+01	3 3 8	.120E+01 .120E+01 .217E+01
			5 5 9	.173E+01 .173E+01 .241E+01	4 5 9	.199E+01 .599E+00 .241E+01
			5 5 9	.120E+01 .120E+01 .241E+01	4 5 9	.229E+01 .859E+00 .241E+01
			4 3 7	.199E+01 .599E+00 .199E+01	3 3 9	.165E+01 .165E+01 .241E+01
			4 3 7	.206E+01 .132E+01 .199E+01	3 3 9	.165E+01 .165E+01 .241E+01
17 BRICK MATERIAL NO. 2			5 1 1	.249E+01 0. 0.	6 3 1	.239E+01 .072E+00 0.
			7 1 1	.252E+01 0. 0.	5 1 2	.241E+01 .087E+00 0.
			7 3 1	.236E+01 .084E+00 0.	5 1 2	.249E+01 0. 0.
			5 3 1	.229E+01 .059E+00 0.	5 1 2	.252E+01 0. 0.
			5 1 3	.249E+01 0. .663E+00	7 1 2	.236E+01 .084E+00 .232E+00
			7 1 3	.252E+01 0. .663E+00	7 1 2	.229E+01 .059E+00 .232E+00
			7 3 3	.236E+01 .084E+00 .663E+00	6 1 3	.249E+01 .072E+00 .663E+00
			5 3 3	.229E+01 .059E+00 .663E+00	7 2 3	.236E+01 .084E+00 .663E+00
			6 1 1	.249E+01 0. .663E+00	6 3 3	.232E+01 .072E+00 .663E+00
			7 2 1	.249E+01 .663E+00 0.	5 2 3	.241E+01 .087E+00 .663E+00
18 BRICK MATERIAL NO. 2			3 3 1	.229E+01 .059E+00 0.	6 3 1	.179E+01 .179E+01 0.
			7 3 1	.236E+01 .084E+00 0.	5 4 1	.206E+01 .182E+01 0.
			7 5 1	.179E+01 .179E+01 0.	5 4 1	.206E+01 .182E+01 0.
			5 5 1	.179E+01 .179E+01 0.	5 4 1	.206E+01 .182E+01 0.
			5 3 3	.229E+01 .059E+00 .663E+00	5 4 2	.236E+01 .084E+00 .663E+00
			7 3 3	.236E+01 .084E+00 .663E+00	5 4 2	.229E+01 .059E+00 .663E+00
			7 5 3	.179E+01 .179E+01 .663E+00	6 4 3	.206E+01 .182E+01 .663E+00
			5 5 3	.179E+01 .179E+01 .663E+00	7 4 3	.236E+01 .084E+00 .663E+00
			6 3 1	.229E+01 .059E+00 0.	6 5 3	.179E+01 .179E+01 .663E+00
			7 4 1	.212E+01 .132E+01 0.	5 4 3	.206E+01 .182E+01 .663E+00
19 BRICK MATERIAL NO. 2			5 1 3	.249E+01 0. .663E+00	6 3 3	.239E+01 .072E+00 .663E+00
			7 1 3	.252E+01 0. .663E+00	5 2 3	.241E+01 .087E+00 .663E+00
			5 3 3	.229E+01 .059E+00 .663E+00	7 1 4	.236E+01 .084E+00 .663E+00
			5 1 5	.249E+01 0. .663E+00	7 1 4	.229E+01 .059E+00 .663E+00
			7 1 5	.252E+01 0. .663E+00	5 3 4	.236E+01 .084E+00 .663E+00
			7 3 5	.236E+01 .084E+00 .663E+00	6 1 5	.206E+01 .182E+01 .663E+00
			5 5 5	.179E+01 .179E+01 .663E+00	7 2 5	.236E+01 .084E+00 .663E+00
			6 1 3	.229E+01 .059E+00 .663E+00	6 3 5	.179E+01 .179E+01 .663E+00
			7 2 3	.249E+01 .663E+00 0.	5 2 5	.241E+01 .087E+00 .663E+00
			7 2 3	.249E+01 .663E+00 0.	5 2 5	.241E+01 .087E+00 .663E+00
20 BRICK MATERIAL NO. 2			5 3 3	.229E+01 .059E+00 .663E+00	6 3 3	.179E+01 .179E+01 .663E+00
			7 3 3	.236E+01 .084E+00 .663E+00	5 4 3	.206E+01 .182E+01 .663E+00
			7 4 3	.179E+01 .179E+01 .663E+00	5 4 3	.206E+01 .182E+01 .663E+00
			5 3 5	.179E+01 .179E+01 .663E+00	7 3 4	.236E+01 .084E+00 .663E+00
			5 3 5	.229E+01 .059E+00 .663E+00	7 3 4	.229E+01 .059E+00 .663E+00
			7 3 5	.236E+01 .084E+00 .663E+00	5 4 4	.179E+01 .179E+01 .663E+00
			7 5 5	.179E+01 .179E+01 .663E+00	5 4 4	.179E+01 .179E+01 .663E+00
			5 5 5	.179E+01 .179E+01 .663E+00	6 4 5	.206E+01 .182E+01 .663E+00
			6 3 3	.229E+01 .059E+00 .663E+00	7 4 5	.236E+01 .084E+00 .663E+00
			7 4 3	.212E+01 .132E+01 .663E+00	5 4 5	.206E+01 .182E+01 .663E+00

ELEMENT NO.	TYPE	NODES			MODAL POINT COORDINATES			MODAL POINT COORDINATES		
		I	J	K	X	Y	Z	X	Y	Z
21	BRICK	MATERIAL NO. 2	5	1	5	.259E+01	1	.128E+01	.872E+00	.128E+01
			7	1	5	.252E+01	0	.128E+01	.687E+00	.128E+01
			7	3	5	.236E+01	.884E+00	.128E+01	.157E+01	.157E+01
			5	3	5	.229E+01	.859E+00	.128E+01	.157E+01	.157E+01
			5	1	7	.259E+01	1	.194E+01	.884E+00	.197E+01
			7	1	7	.252E+01	0	.194E+01	.687E+00	.197E+01
			7	3	7	.236E+01	.884E+00	.194E+01	.194E+01	.194E+01
			5	3	7	.229E+01	.859E+00	.194E+01	.194E+01	.194E+01
			6	1	5	.268E+01	0	.128E+01	.872E+00	.194E+01
			7	2	5	.268E+01	.449E+00	.128E+01	.687E+00	.194E+01
22	BRICK	MATERIAL NO. 2	5	3	5	.229E+01	.859E+00	.128E+01	.176E+01	.128E+01
			7	3	5	.236E+01	.884E+00	.128E+01	.182E+01	.128E+01
			7	5	5	.178E+01	.178E+01	.128E+01	.259E+01	.859E+00
			5	5	5	.173E+01	.173E+01	.128E+01	.259E+01	.859E+00
			5	3	7	.229E+01	.859E+00	.194E+01	.178E+01	.157E+01
			7	3	7	.236E+01	.884E+00	.194E+01	.178E+01	.157E+01
			7	5	7	.178E+01	.178E+01	.194E+01	.252E+01	.872E+00
			5	5	7	.173E+01	.173E+01	.194E+01	.252E+01	.872E+00
			6	3	5	.232E+01	.872E+00	.128E+01	.176E+01	.176E+01
			7	4	5	.232E+01	.135E+01	.128E+01	.206E+01	.182E+01
23	BRICK	MATERIAL NO. 2	9	1	7	.259E+01	1	.194E+01	.872E+00	.194E+01
			7	1	7	.252E+01	0	.194E+01	.687E+00	.194E+01
			7	3	7	.236E+01	.884E+00	.194E+01	.217E+01	.217E+01
			5	3	7	.229E+01	.859E+00	.194E+01	.217E+01	.217E+01
			5	1	9	.259E+01	1	.261E+01	.884E+00	.217E+01
			7	1	9	.252E+01	0	.261E+01	.687E+00	.217E+01
			7	3	9	.236E+01	.884E+00	.261E+01	.261E+01	.261E+01
			5	3	9	.229E+01	.859E+00	.261E+01	.261E+01	.261E+01
			6	1	7	.268E+01	0	.194E+01	.872E+00	.261E+01
			7	2	7	.268E+01	.449E+00	.194E+01	.687E+00	.261E+01
24	BRICK	MATERIAL NO. 2	5	3	7	.229E+01	.859E+00	.194E+01	.176E+01	.194E+01
			7	3	7	.236E+01	.884E+00	.194E+01	.182E+01	.194E+01
			7	5	7	.178E+01	.178E+01	.194E+01	.259E+01	.859E+00
			5	5	7	.173E+01	.173E+01	.194E+01	.259E+01	.859E+00
			5	3	9	.229E+01	.859E+00	.261E+01	.178E+01	.217E+01
			7	3	9	.236E+01	.884E+00	.261E+01	.178E+01	.217E+01
			7	5	9	.178E+01	.178E+01	.261E+01	.252E+01	.872E+00
			5	5	9	.173E+01	.173E+01	.261E+01	.252E+01	.872E+00
			6	3	7	.232E+01	.872E+00	.194E+01	.176E+01	.176E+01
			7	4	7	.232E+01	.135E+01	.194E+01	.206E+01	.182E+01

BOLNDARY CONDITIONS.

ELEMENT NUMBER	ELEMENT I	ELEMENT J	ELEMENT K	TYPE	NOTE OR FACE	VALUE			
1	1	1	1	UZ	3	-.1092E-01			
				UZ	10	-.1092E-01			
				UZ	2	-.1092E-01			
				UZ	11	-.1638E-01			
				UZ	9	-.1638E-01			
				UZ	4	-.2184E-01			
				UZ	12	-.2184E-01			
				UZ	1	-.2184E-01			
				PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	5	0.			
2	1	3	1	UZ	3	-.1092E-01			
				UZ	10	-.1092E-01			
				UZ	11	-.1638E-01			
				UZ	4	-.2184E-01			
				UZ	12	-.2184E-01			
				PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	2	0.			
3	3	1	1	UZ	3	0.			
				UZ	10	0.			
				UZ	2	0.			
				UZ	11	-.5460E-02			
				UZ	9	-.5460E-02			
				SLOPE	5	0.			
4	3	3	1	UZ	3	0.			
				UZ	10	0.			
				UZ	11	-.5460E-02			
				SLOPE	2	0.			
5	1	1	3	PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	5	0.			
6	1	3	3	PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	2	0.			
7	3	1	3	SLOPE	5	0.			
8	3	3	3	SLOPE	2	0.			
9	1	1	5	PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	5	0.			
10	1	3	5	PRESSURE	4	.1425E+04	.1425E+04	.1425E+04	.1425E+04
				SLOPE	2	0.			
11	3	1	5	SLOPE	5	0.			
12	3	3	5	SLOPE	2	0.			
13	1	1	7	UZ	7	-.3418E-02			
				UZ	10	-.2308E-02			
				UZ	6	-.1848E-02			

BOUNDARY CONDITIONS.

ELEMENT NUMBER	ELEMENT I J K	TYPE	NODE OR FACE	VALUE			
13	1 1 7	UZ	19	-.3060E-02			
		UZ	17	-.2000E-02			
		UZ	8	-.4620E-02			
		UZ	20	-.3990E-02			
		UZ	5	-.2150E-02			
		PRESSURE	4	.1429E+04	.1429E+04	.1429E+04	.1429E+04
		SLOPE	5	0.			
14	1 3 7	UZ	7	-.3410E-02			
		UZ	10	-.3410E-02			
		UZ	19	-.3060E-02			
		UZ	8	-.4620E-02			
		UZ	20	-.4620E-02			
		PRESSURE	4	.1429E+04	.1429E+04	.1429E+04	.1429E+04
		SLOPE	2	0.			
15	3 1 7	UZ	7	-.1930E-02			
		UZ	10	-.1930E-02			
		UZ	6	-.1930E-02			
		UZ	19	-.2300E-02			
		UZ	17	-.1600E-02			
		SLOPE	5	0.			
16	3 3 7	UZ	7	-.1930E-02			
		UZ	10	-.1930E-02			
		UZ	19	-.2300E-02			
		SLOPE	2	0.			
17	5 1 1	SLOPE	6	0.			
		SLOPE	5	0.			
18	9 3 1	SLOPE	6	0.			
		SLOPE	2	0.			
19	5 1 3	SLOPE	5	0.			
20	5 3 3	SLOPE	2	0.			
21	5 1 5	SLOPE	5	0.			
22	5 3 5	SLOPE	2	0.			
23	5 1 7	SLOPE	5	0.			
24	5 3 7	SLOPE	2	0.			

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS
FIRST SECOND THIRD
I ELEMENT POINT STRESS I ELEMENT POINT STRESS I ELEMENT POINT STRESS
J K NO. J K NO. J K NO.

MATERIAL NUMBER = 1															
SIGMA MAX	1	1	3	41	-798E+03	1	1	5	73	-798E+03	1	1	1	5	-888E+03
SIGMA MIN	3	1	1	20	-168E+04	1	1	7	116	-167E+04	3	3	1	30	-166E+04
TAU MAX	1	1	3	41	315E+03	1	1	5	73	305E+03	1	1	3	37	289E+03
EPS MAX	1	1	1	5	246E-01	1	1	3	37	246E-01	1	1	1	4	289E-01
EPS MIN	1	1	3	41	-327E-01	1	1	5	73	-318E-01	1	1	3	37	-226E-01
GAMMA MAX	1	1	3	41	497E-01	1	1	5	73	481E-01	1	1	3	37	472E-01
MATERIAL NUMBER = 2															
SIGMA MAX	5	3	7	209	553E+05	5	3	7	218	548E+05	5	3	1	155	588E+05
SIGMA MIN	5	1	7	203	-143E+05	5	1	7	206	-129E+05	5	1	7	199	-124E+05
TAU MAX	5	3	1	154	291E+05	5	3	1	157	290E+05	5	3	7	208	288E+05
EPS MAX	5	3	1	156	179E-02	5	3	1	154	178E-02	5	3	1	155	178E-02
EPS MIN	5	1	7	203	-833E-03	5	1	7	199	-805E-03	5	3	7	212	-798E-03
GAMMA MAX	5	3	1	154	252E-02	5	3	1	157	251E-02	5	3	7	208	249E-02

TIME IN POST = 3.899 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT = 5													
MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD	Z-COORD
1	38181			948E+08	8.		11	38182			123E+01	463E+00	493E+03
2	38183			159E+01	0.		12	38201			925E+08	168E+00	353E+00
3	38183			159E+01	0.	595E+30	13	40101			127E+01	0.	844E+00
4	38181			948E+08	8.	330E+08	14	40103			186E+01	0.	835E+00
5	50181			158E+01	0.	118E+01	15	40303			159E+01	595E+00	835E+00
6	50183			159E+01	0.	118E+01	16	40301			840E+00	735E+00	835E+00
7	50381			159E+01	0.	595E+00	17	58102			151E+01	34E+00	117E+01
8	50383			159E+01	0.	120E+01	18	58203			158E+01	119E+01	119E+01
9	38182			123E+01	0.	463E+00	19	58382			123E+01	463E+00	128E+01
10	38203			167E+01	0.	463E+00	20	58201			131E+01	265E+01	158E+01

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS															
FIRST					SECOND					THIRD					
ELEMENT					ELEMENT					ELEMENT					
I	J	K	POINT NO.	STRESS	I	J	K	POINT NO.	STRESS	I	J	K	POINT NO.	STRESS	
MATERIAL NUMBER = 1															
SIGMA MAX	1	1	5	17	.181E+05	1	3	5	32	.101E+05	3	1	3	38	.184E+05
SIGMA MIN	1	3	5	35	-.258E+05	1	1	5	14	-.146E+05	3	1	3	37	-.088E+04
TAU MAX	1	1	5	14	.315E+03	1	3	5	28	.307E+03	1	1	5	13	.307E+03
EPS MAX	1	1	3	1	.246E-01	1	1	3	4	.227E-01	1	3	3	19	.227E-01
EPS MIN	1	1	5	14	-.327E-01	1	1	5	13	-.293E-01	1	1	3	8	-.203E-01
GAMMA MAX	1	1	5	14	.697E-01	1	1	3	8	.604E-01	1	1	3	13	.606E-01

TIME IN POST = 1.139 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 15

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT = 1									
NODE					NODE				
K	J	I	X-COORD	Y-COORD	K	J	I	X-COORD	Y-COORD
1	30181	.948E+00	0.	.663E+00	11	30182	.111E+01	.281E+00	.443E+00
2	30182	.112E+01	0.	.663E+00	12	30201	.986E+00	.868E-01	.402E+00
3	30183	.112E+01	.239E+03	.663E+00	13	40101	.110E+01	0.	.642E+00
4	30184	.929E+00	.160E+00	.663E+00	14	60103	.146E+01	0.	.659E+00
5	50101	.127E+01	0.	.661E+00	15	60303	.137E+01	.253E+00	.653E+00
6	50102	.117E+01	0.	.661E+00	16	60301	.182E+01	.192E+00	.656E+00
7	50103	.146E+01	.271E+03	.637E+00	17	50102	.142E+01	0.	.843E+00
8	50301	.112E+01	.217E+00	.663E+00	18	50203	.125E+01	.102E+00	.539E+00
9	30182	.112E+01	0.	.663E+00	19	50202	.126E+01	.246E+00	.830E+00
10	30203	.131E+01	.110E+03	.663E+00	20	50201	.129E+01	.121E+00	.802E+00

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS																			
FIRST			SECOND			THIRD													
ELEMENT		POINT	STRESS		ELEMENT		POINT	STRESS		ELEMENT		POINT	STRESS						
I	J	K	I	J	K	I	J	K	I	J	K	I	J	K					
MATERIAL NUMBER = 1																			
SIGMA MAX		3	3	3	57	.190E+05		3	1	5	51	.113E+05		1	3	3	22	.980E+04	
SIGMA MIN		3	3	5	70	-.349E+05		3	3	3	50	-.151E+05		1	3	3	21	-.151E+05	
TAU MAX		1	3	5	35	.317E+03		1	3	5	20	.300E+03		1	1	3	0	.300E+03	
EPS MAX		1	1	3	7	.260E-01		3	1	3	44	.249E-01		1	1	3	1	.249E-01	
EPS MIN		1	3	5	35	-.293E-01		1	1	3	0	-.259E-01		1	1	3	13	-.259E-01	
GAMMA MAX		1	3	5	35	.404E-01		1	1	5	13	.473E-01		1	1	3	0	.473E-01	
TIME IN POST		= 1.142 SECONDS																	
TIME IN STOP		= 88.888 SECONDS																	

NICON SCOPE 3.4.2 MM SN 48 MM R.D 14.27
 15.27.28.HM3KPO FROM /KP
 15.27.28.IP 8888784 WORDS - FILE INPUT , DC 88
 15.27.28.HM3KP.Y1000.CH200000.L1000.
 15.27.29.7E41K10MS 7200 A3 MACKETT BM01
 15.27.30.LIMIT(1000)
 15.27.30.ATTACH(TEX30,KPXXXXX,IC=KXXXX,CY=3,MP=1)
 15.27.30.OT3POSE(OUTPUT,PP=C)
 15.43.20.LOSET(PRESET=ZERO)
 15.43.21.TEX30.
 16.33.12. NON-FATAL ERROR(S) IN OVERLAY GEN.
 19.04.52. STOP
 19.04.52. 86.400 CP SECONDS EXECUTION TIME
 19.04.52.EXIT.
 19.04.52.OP 88844992 WORDS - FILE OUTPUT , DC 48
 19.04.53.HS 46592 WORDS (344064 MAX USED)
 19.04.53.CPA 93.411 SEC. 84.878 ADJ.
 19.04.53.IO 96.688 SEC. 54.647 ADJ.
 19.04.53.CH 9419.918 KWS. 99.769 ADJ.
 19.04.53.PP 194.494 SEC. DATE 10/10/77
 19.04.53.EJ END OF JOB, KP

LINE DIRECT LIST OF INPUT DATA

```

1 SPINOCYL - STAR TO CYLINDRICAL HOLE TRANSITION (III)
2 SETUP,4,PRESCTB
3 ISO,PROPELLANT,1,7F3,499,-,014245
4 ISO,CASE,2,3,E7,3
5 END,MATERIALS
6 BLOCK-C,1, 1,1,1, 5,3,3 SPR,PROPELLANT NODES
7 94,0,0, 2,447,0,0, 2,291,0,0, .88, .33, C/
8 94,0,0,463, 2,447,0,0,463, 2,291,0,0,463, .88, .33,463
9 10,2,430,0,292,0, 12,913,0,223,0, 18,2,430,0,292,0,463, 20,913,0,223,0,463/
10 22,2,377,0,580,0, 24,933,0,112,0, 30,2,377,0,580,0,463, 32,933,0,112,0,463
11 BLOCK-C,1, 1,3,1, 5,5,3 SPR,PROPELLANT NODES
12 88,0,0, 2,291,0,0, 1,730,1,730,0, .665, .665, C/
13 88,0,0,463, 2,291,0,0,463, 1,730,1,730,0,463, .665, .665,463
14 10,2,150,1,176,0, 12,752,0,559,0, 18,2,150,1,176,0,463, 20,752,0,559,0,463/
15 22,1,958,1,457,0, 24,825,0,452,0, 30,1,958,1,457,0,463, 32,825,0,452,0,463
16 BLOCK-C,1, 1,1,3, 5,3,7 SPROPELLANT NODES
17 94,0,0,463, 2,447,0,0,463, 2,291,0,0,463, .88, .33,463/
18 2,145,0,1,942, 2,447,0,1,942, 2,291,0,0,1,942, .88, .33,1,942
19 10,2,430,0,292,0,463, 12,913,0,223,0,463, 13,1,39,0,0,963/
20 18,2,430,0,292,1,942, 20,1,403,0,33,1,942, 22,2,377,0,580,0,463/
21 24,933,0,112,0,463, 25,1,79,0,1,363, 30,2,377,0,580,1,942/
22 32,1,89,0,33,1,942
23 BLOCK-C,1, 1,3,3, 5,5,7 SPROPELLANT NODES
24 88,0,0,463, 2,291,0,0,463, 1,730,1,730,0,463, .665, .665,463/
25 88,0,0,1,942, 2,291,0,0,1,942, 1,730,1,730,1,942, .665, .665,1,942
26 10,2,150,1,176,0,463, 12,752,0,559,0,463, 18,2,150,1,176,1,942/
27 20,752,0,559,1,942, 22,1,958,1,457,0,463, 24,825,0,452,0,463/
28 30,1,958,1,457,1,942, 32,825,0,452,1,942
29 BLOCK-C,1, 1,1,7, 5,3,9 SPROPELLANT NODES
30 2,145,0,1,942, 2,447,0,1,942, 2,291,0,0,1,942, .88, .33,1,942/
31 2,145,0,2,405, 2,447,0,2,405, 2,291,0,0,2,405, .88, .33,2,405
32 10,2,430,0,292,1,942, 12,1,403,0,33,1,942, 18,2,430,0,292,2,405/
33 20,1,403,0,33,2,405, 22,2,377,0,580,1,942, 24,1,89,0,33,1,942/
34 30,2,377,0,580,2,405, 32,1,89,0,33,2,405
35 BLOCK-C,1, 1,3,7, 5,5,9 SPROPELLANT NODES
36 88,0,0,1,942, 2,291,0,0,1,942, 1,730,1,730,1,942, .665, .665,1,942/
37 88,0,0,2,405, 2,291,0,0,2,405, 1,730,1,730,2,405, .665, .665,2,405
38 10,2,150,1,176,1,942, 12,752,0,559,1,942, 18,2,150,1,176,2,405/
39 20,752,0,559,2,405, 22,1,958,1,457,1,942, 24,825,0,452,1,942/
40 30,1,958,1,457,2,405, 32,825,0,452,2,405
41 BLOCK,2, 5,1,1, 7,3,3 SCASE NODES
42 2,447,0,0, 2,517,0,0, 2,517,20,56,0, 2,447,20,56,0/
43 2,447,0,0,463, 2,517,0,0,463, 2,517,20,56,0,463, 2,447,20,56,0,463
44 BLOCK,2, 5,3,1, 7,5,3 SCASE NODES
45 2,447,20,56,0, 2,517,20,56,0, 2,517,0,0, 2,447,0,0/
46 2,447,20,56,0,463, 2,517,20,56,0,463, 2,517,0,0,463, 2,447,0,0,463
47 BLOCK,2, 5,1,3, 7,3,7 SCASE NODES
48 2,447,0,0,463, 2,517,0,0,463, 2,517,20,56,0,463, 2,447,20,56,0,463/
49 2,447,0,1,942, 2,517,0,1,942, 2,517,20,56,1,942, 2,447,20,56,1,942
50 BLOCK,2, 5,3,3, 7,5,7 SCASE NODES
51 2,447,20,56,0,463, 2,517,20,56,0,463, 2,517,0,0,463, 2,447,0,0,463/
52 2,447,20,56,1,942, 2,517,20,56,1,942, 2,517,0,0,1,942, 2,447,0,0,1,942
53 BLOCK,2, 5,1,7, 7,3,9 SCASE NODES
54 2,447,0,1,942, 2,517,0,1,942, 2,517,20,56,1,942, 2,447,20,56,1,942/
55 2,447,0,2,405, 2,517,0,2,405, 2,517,20,56,2,405, 2,447,20,56,2,405
56 BLOCK,2, 5,3,7, 7,5,9 SCASE NODES
57 2,447,20,56,1,942, 2,517,20,56,1,942, 2,517,0,0,1,942, 2,447,0,0,1,942/
58 2,447,20,56,2,405, 2,517,20,56,2,405, 2,517,0,0,2,405, 2,447,0,0,2,405
59 END,GRID
60 KLOOP,4
61 ILOOP,2
62

```

```

63 BRICK,1, 1,1,1 8 PROPELLANT ELEMENTS
64 JEND
65 IEND
66 KEND
67 KLOOP,4
68 JLOOP,2
69 BRICK,2, 5,1,1 8 CASE ELEMENTS
70 JEND
71 KEND
72 KLOOP,4
73 ILOOP,3
74 BC,SLOPE,1,1,1, 5 8 0 DEGREE FACE
75 BC,SLOPE,1,3,1, 2 8 45 DEGREE FACE
76 IEND
77 KEND
78 JLOOP,2
79 BC,SLOPE,5,1,1, 6 8 END OF CASE
80 JEND
81 BC,UZ,1,1,1, 0,-7.385E-2
82 BC,UZ,1,2,1, 0,-7.385E-2
83 BC,UZ,1,3,1, 0,-7.385E-2
84 BC,UZ,1,4,1, 0,-7.385E-2
85 BC,UZ,1,5,1, 0,-7.385E-2
86 BC,UZ,2,1,1, 0,-5.938E-2
87 BC,UZ,2,3,1, 0,-5.938E-2
88 BC,UZ,2,5,1, 0,-5.938E-2
89 BC,UZ,3,1,1, 0,-3.692E-2
90 BC,UZ,3,2,1, 0,-3.692E-2
91 BC,UZ,3,3,1, 0,-3.692E-2
92 BC,UZ,3,4,1, 0,-3.692E-2
93 BC,UZ,3,5,1, 0,-3.692E-2
94 BC,UZ,4,1,1, 0,-1.846E-2
95 BC,UZ,4,3,1, 0,-1.846E-2
96 BC,UZ,4,5,1, 0,-1.846E-2
97 BC,UZ,5,1,1, 0,0
98 BC,UZ,5,2,1, 0,0
99 BC,UZ,5,3,1, 0,0
100 BC,UZ,5,4,1, 0,0
101 BC,UZ,5,5,1, 0,0
102 BC,UZ,1,1,9, 0,-.977E-2
103 BC,UZ,1,2,9, 0,-1.864E-2
104 BC,UZ,1,3,9, 0,-1.436E-2
105 BC,UZ,1,4,9, 0,-1.436E-2
106 BC,UZ,1,5,9, 0,-1.436E-2
107 BC,UZ,2,1,9, 0,-.525E-2
108 BC,UZ,2,3,9, 0,-1.165E-2
109 BC,UZ,2,5,9, 0,-1.165E-2
110 BC,UZ,3,1,9, 0,-.478E-2
111 BC,UZ,3,2,9, 0,-.638E-2
112 BC,UZ,3,3,9, 0,-1.815E-2
113 BC,UZ,3,4,9, 0,-1.815E-2
114 BC,UZ,3,5,9, 0,-1.815E-2
115 BC,UZ,4,1,9, 0,-.414E-2
116 BC,UZ,4,3,9, 0,-.638E-2
117 BC,UZ,4,5,9, 0,-.638E-2
118 BC,UZ,5,1,9, 0,-.362E-2
119 BC,UZ,5,2,9, 0,-.362E-2
120 BC,UZ,5,3,9, 0,-.362E-2
121 BC,UZ,5,4,9, 0,-.362E-2
122 BC,UZ,5,5,9, 0,-.362E-2
123 END ELEMENTS
124 SOLVE
125 POST
126 BLOCK
127 OPTION,2
128 END DATA

```

```

129 REZONE,1,1,3, 3,3,5
130 REFINE,GRADS,1,1,3, 2,2,2
131 OCR,REZONE,1,1,3, 2,2,2,2,2, 1,1,3
132 END,CONTROL
133 SOLVE
134 POST
135 BLOCK
136 OPTION,2
137 END,POST
138 REZONE,1,1,3, 3,3,5
139 REFINE,GRADS,1,1,3, 2,2,2
140 OCR,REZONE,1,1,3, 2,2,2,2,2, 1,1,3
141 END,CONTROL
142 SOLVE
143 POST
144 BLOCK
145 OPTION,2
146 END,POST
147 STOP

```

TIME IN FFLOSS = 1.111 SECONDS

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS

-----FIRST-----/-----SECOND-----/-----THIRD-----

ELEMENT POINT STRESS ELEMENT POINT STRESS ELEMENT POINT STRESS

I J K NO. I J K NO. I J K NO.

MATERIAL NUMBER = 1

SIGMA MAX	1	1	5	73	.225E+03	1	1	3	41	.225E+03	1	1	7	159	.208E+03
SIGMA MIN	1	1	7	116	-.930E+02	1	1	3	44	-.808E+02	1	1	5	76	-.764E+02
TAU MAX	1	1	3	41	.110E+03	1	1	5	73	.107E+03	1	1	5	77	.919E+02
EPS MAX	1	1	1	5	.211E+00	1	1	3	37	.211E+00	1	1	1	6	.103E+00
EPS MIN	1	1	3	41	-.291E+00	1	1	5	73	-.276E+00	1	1	5	77	-.226E+00
GAMMA MAX	1	1	3	41	.673E+00	1	1	5	73	.659E+00	1	1	5	77	.304E+00

MATERIAL NUMBER = 2

SIGMA MAX	5	3	7	213	.374E+05	5	3	7	209	.360E+05	5	3	7	210	.364E+05
SIGMA MIN	5	1	7	203	-.116E+06	5	1	7	206	-.116E+06	5	3	7	212	-.114E+06
TAU MAX	5	1	7	203	.640E+05	5	3	7	212	.637E+05	5	1	7	206	.686E+05
EPS MAX	5	1	7	203	.234E-02	5	3	7	212	.233E-02	5	1	7	206	.283E-02
EPS MIN	5	1	7	203	-.321E-02	5	3	7	212	-.310E-02	5	1	7	206	-.310E-02
GAMMA MAX	5	1	7	203	.555E-02	5	3	7	212	.552E-02	5	1	7	206	.552E-02

TIME IN POST = 3.009 SECONDS

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 16

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT = 5

MODE	K	J	I	X-COORD	Y-COORD	Z-COORD	MODE	K	J	I	X-COORD	Y-COORD	Z-COORD
1	38181			.948E+00							.123E+01	.663E+00	.663E+00
2	38183			.169E+01			11	38382			.925E+00	.160E+00	.663E+00
3	38383			.159E+01	.595E+03		12	38281			.127E+01	0.	.844E+00
4	38381			.808E+00	.338E+00		13	48101			.106E+01	0.	.833E+00
5	58181			.168E+01	0.		14	48103			.159E+01	.595E+00	.833E+00
6	58183			.283E+04	0.		15	48303			.808E+00	.338E+00	.833E+00
7	58383			.159E+01	.595E+00		16	48401			.808E+00	.338E+00	.833E+00
8	58381			.808E+00	.338E+00		17	58182			.101E+01	0.	.117E+01
9	38182			.132E+01	0.		18	58283			.106E+01	.240E+00	.119E+01
10	38283			.167E+01	.282E+00		19	58382			.123E+01	.662E+00	.128E+01
							20	58281			.131E+01	.266E+00	.110E+01

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS

FIRST		SECOND		THIRD	
ELEMENT	POINT	ELEMENT	POINT	ELEMENT	POINT
I	J	I	J	I	J
MATERIAL NUMBER = 1					
SIGMA MAX	1 3 5 32	540E+04	1 1 5 17	540E+04	3 1 3 30
SIGMA MIN	1 3 5 35	-802E+04	1 1 5 14	-807E+04	1 1 3 2
TAU MAX	1 1 5 14	110E+03	1 3 3 23	100E+03	1 3 3 20
EPS MAX	1 1 3 1	211E+00	1 1 3 4	193E+00	1 3 3 19
EPS MIN	1 1 5 14	-251E+00	1 3 5 20	-244E+00	1 3 3 23
GAMMA MAX	1 1 3 14	673E+00	1 3 5 20	29E+00	1 1 3 17

TIME IN POST = 1.12E SECOND

MAXIMUM NUMBER OF COARSE GRID ELEMENTS POSSIBLE = 15

MAXIMUM DIMENSION OF REFINED GRID = 1331

MAXIMUM NUMBER OF GRID POINTS IN ANY ONE DIRECTION = 15

COARSE GRID ELEMENT # 1		X-COORD		Y-COORD		Z-COORD		X-COORD		Y-COORD		Z-COORD	
NODE	K J I	X-COORD		Y-COORD		Z-COORD		X-COORD		Y-COORD		Z-COORD	
1	30101	948E+00	0.	0.	0.	0.	0.	111E+01	0.	201E+00	0.	483E+00	0.
2	30203	132E+01	0.	239E+00	0.	0.	0.	108E+01	0.	090E+01	0.	082E+00	0.
3	30303	130E+01	0.	160E+03	0.	0.	0.	110E+01	0.	0.	0.	082E+00	0.
4	30301	929E+00	0.	0.	0.	0.	0.	144E+01	0.	293E+00	0.	090E+00	0.
5	50101	127E+01	0.	0.	0.	0.	0.	137E+01	0.	0.	0.	090E+00	0.
6	50103	157E+01	0.	0.	0.	0.	0.	102E+01	0.	192E+00	0.	090E+00	0.
7	50303	144E+01	0.	271E+00	0.	0.	0.	142E+01	0.	0.	0.	082E+00	0.
8	50301	112E+01	0.	217E+00	0.	0.	0.	152E+01	0.	193E+00	0.	082E+00	0.
9	30102	112E+01	0.	0.	0.	0.	0.	120E+01	0.	204E+00	0.	090E+00	0.
10	30203	131E+01	0.	110E+00	0.	0.	0.	120E+01	0.	121E+00	0.	082E+00	0.

ELEMENT SUMMARY REPORT

THREE MOST HIGHLY STRESSED ELEMENTS															
FIRST					SECOND					THIRD					
ELEMENT			POINT NO.		STRESS			ELEMENT			POINT NO.		STRESS		
I	J	K	I	J	K	I	J	K	I	J	K	I	J	K	
MATERIAL NUMBER = 1															
SIGMA MAX		3	3	3	57	.662E+04			3	1	5	51	.679E+04		
SIGMA MIN		3	3	5	70	-.110E+05			3	3	3	50	-.610E+04		
TAU MAX		1	3	5	35	.108E+03			1	3	3	23	.933E+02		
EPS MAX		1	1	3	7	.235E+10			3	1	3	44	.229E+00		
EPS MIN		1	3	5	35	-.244E+00			1	1	5	13	-.202E+00		
GAMMA MAX		1	3	5	35	.629E+00			1	1	5	13	.390E+00		
TIME IN POST		= 1.158 SECONDS													
TIME IN STOP		= 86.298 SECONDS													

MICOM SCOPE 3.4.2 MM SN 43 MMN P.0 14.27
 15.38.24.MMKPR FROM /KP
 15.38.24.IP 00000784 WORDS - FILE INPUT , DC 00
 15.38.26.MMKPR.Y1000.CWZ00000.L1000.
 15.38.25.7E41K18M05 7200 A3 HACKETT BM01
 15.38.26.LIMIT(1000)
 15.38.26.ATTACH(TEX38,KPXXXXM,IC=KPXXX,CY=3,MP=1)
 15.38.26.DISPOSE(OUTPUT,PP=C)
 15.44.25.LOSET(PRESET=ZERO)
 15.44.25.TEX39.
 16.31.53. NON-FATAL ERROR(S) IN OVERLAY GEN.
 19.06.51. STOP
 19.06.51. 06.173 CP SECONDS EXECUTION TIME
 19.06.51.EXIT.
 19.06.51.OP 00044864 WORDS - FILE OUTPUT , DC 40
 19.06.51.MS 46592 WORDS (344064 MAX USED)
 19.06.51.CPA 93.278 SEC. 83.959 ADJ.
 19.06.51.IO 96.212 SEC. 94.428 ADJ.
 19.06.51.CH 9386.852 KWS. 95.473 ADJ.
 19.06.51.PP 197.388 SEC. DATE 10/10/77
 19.06.51.EJ END OF JOB. KP

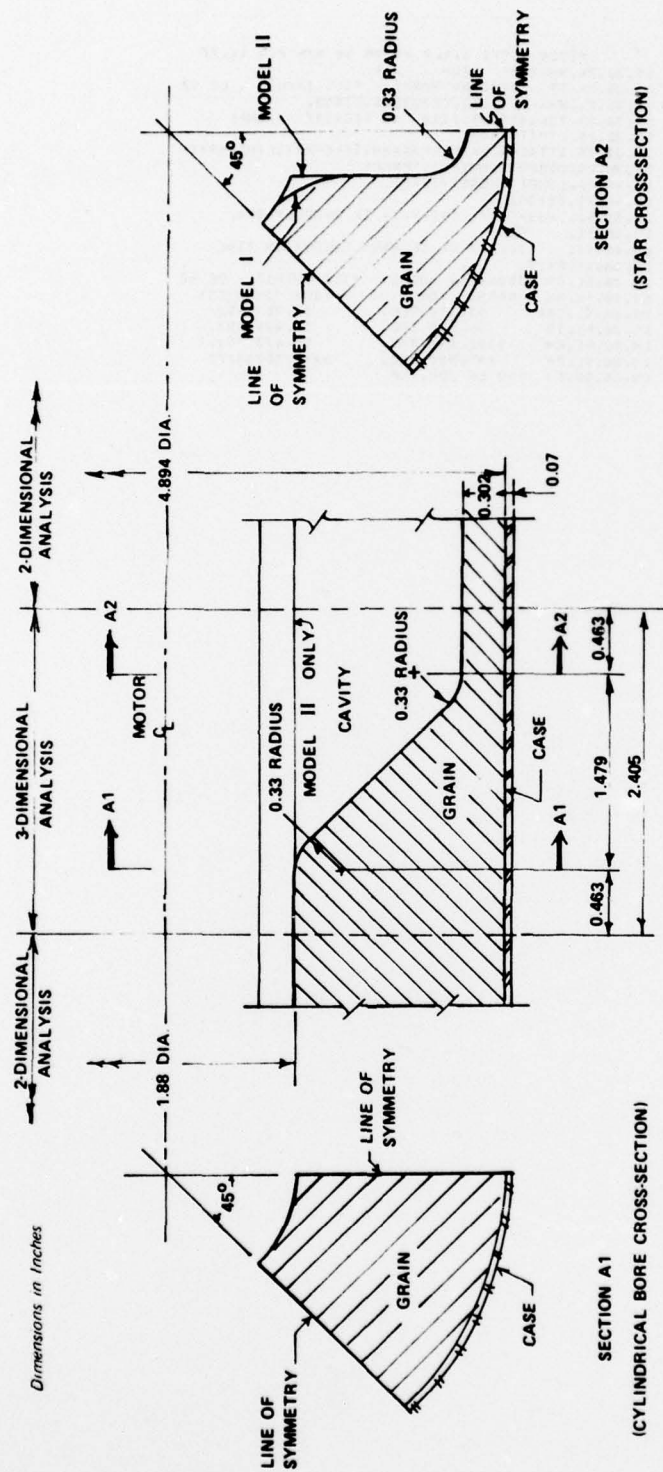


Figure 1. Star to Cylindrical Bore Transition Region (45° Segment)

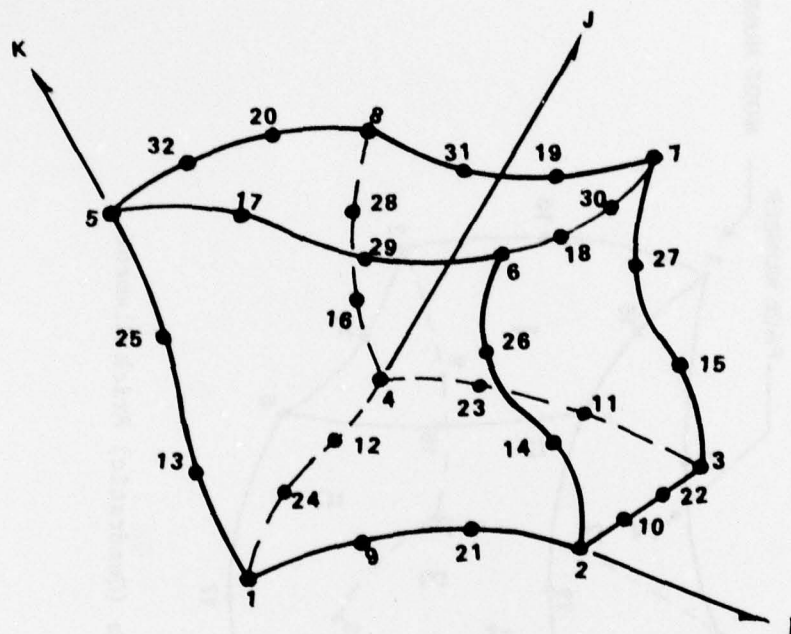


Figure 2. Cubic Grid Generation Block

The eight corner points must be input (1 thru 8).
Points 9 thru 32 not specified are located auto-
matically by linear interpolation between corners.

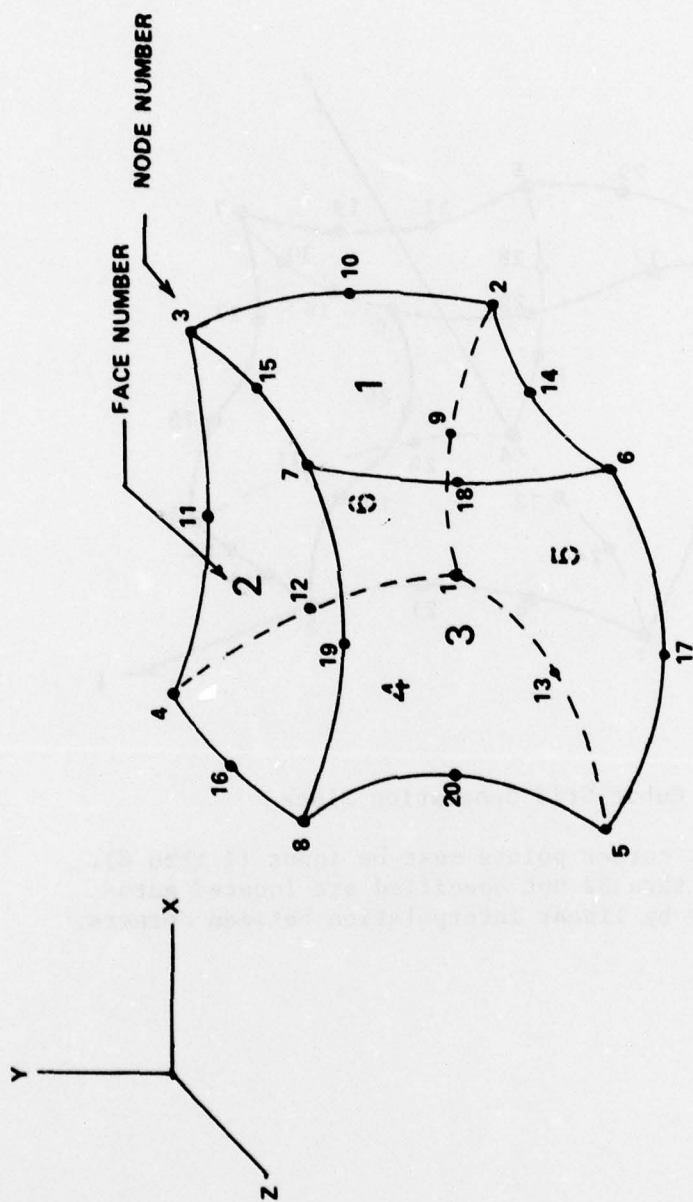


Figure 3. 20 Node (Quadratic) Brick Element

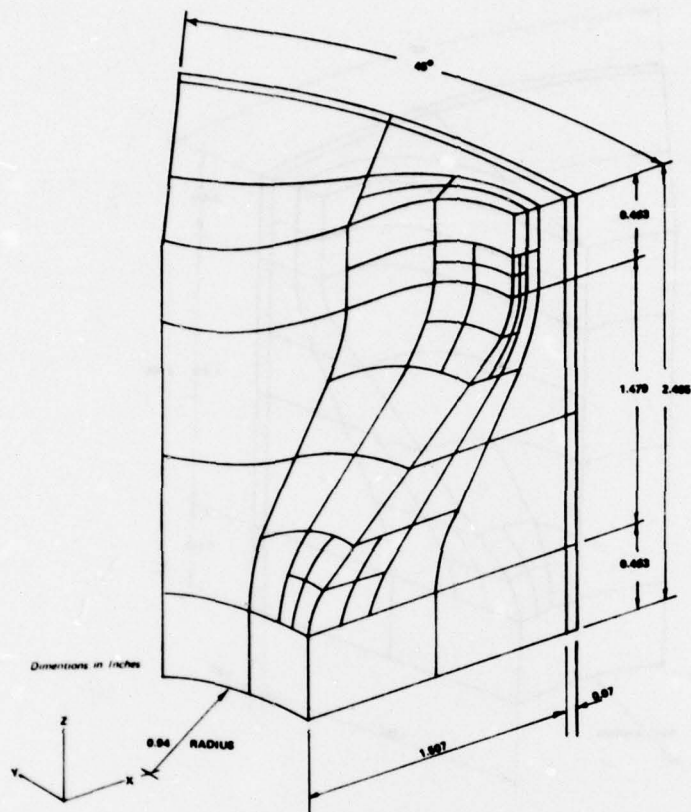


Figure 4. Finite Element Model of Star to Cylindrical Bore Transition (I)

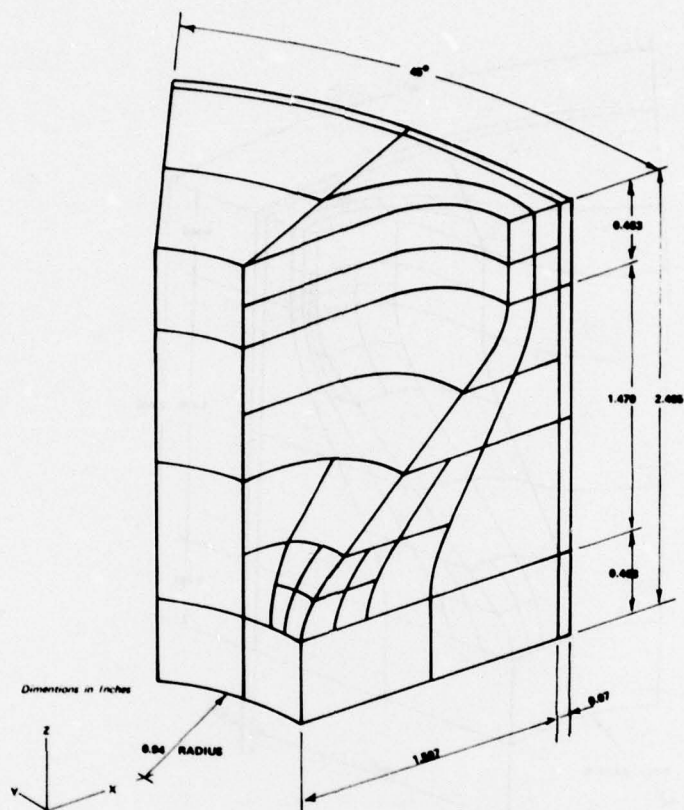
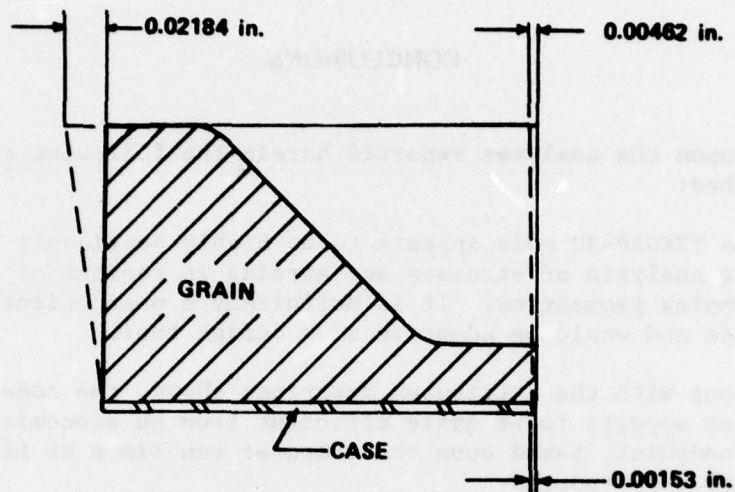
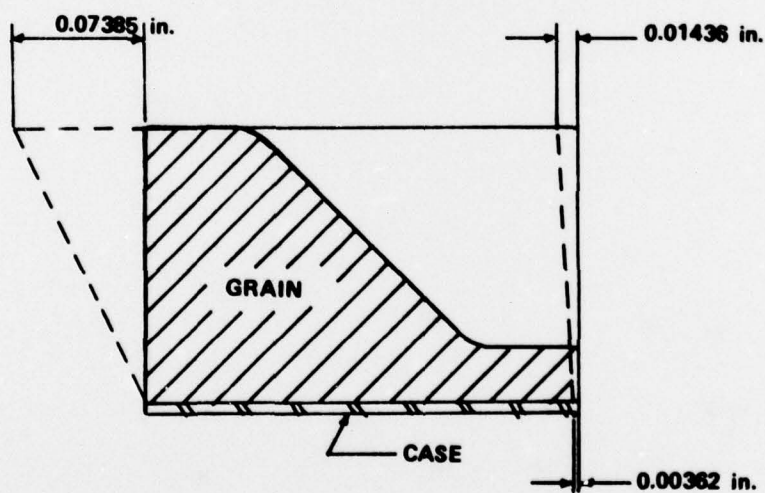


Figure 5. Finite Element Model of Star to Cylindrical Bore Transition (II)



a) PRESSURE LOADING CONDITION



b) THERMAL LOADING CONDITION

Figure 6. Grain Transition Interface Displacements
(From Previous Two-Dimensional Analyses)

CONCLUSIONS

Based upon the analyses reported herein the following conclusions can be reached:

- 1) The TEXTGAP-3D code appears to be highly applicable to the analysis of stresses and strains in regions of complex geometrics. It is definitely a user oriented code and would be adaptive as a design tool.
- 2) Along with the attributes described above, the code also appears to be quite efficient from an economic standpoint, based upon the computer run times of the analyses reported.

REFERENCES

1. Engineering Analysis of Selected Advanced Propulsion Concepts - III, Technical Report RK-CR-76, US Army Missile Command, Redstone Arsenal, Alabama, September 1976.
2. E. B. Becker and R. S. Dunham, "TEXGAP-3D - A User Oriented Three-Dimensional Static Linear Elastic Stress Analysis Program", Vol. I, March 1977.
3. E. B. Becker and R. S. Dunham, "TEXGAP-3D - A User Oriented Three-Dimensional Static Linear Elastic Stress Analysis Program", Vol. II, March 1977.

DISTRIBUTION

	No. of Copies
Chemical Propulsion Mailing List	83
Defense Documentation Center Cameron Station Alexandria, Virginia 22314	12
Technological Consultants, Inc. Attn: Dr. R. A. Heller P. O. Box 554 Blacksburg, Virginia 24060	3
Athena Engineering Company Attn: Dr. T. L. Cost 1155 Northwood Lake Northport, Alabama 35476	1
Rohm and Haas Company Huntsville Defense Contract Office Attn: Dr. H. M. Shuey Arthur Murray Building 723-A Arcadia Circle Huntsville, Alabama 35801	1
Dr. R. M. Hackett Box 1537 Station B Vanderbilt University Nashville, Tennessee 37235	5
Batelle Durham Office P. O. Box 8796 Durham, North Carolina 27707	1
DRCPM-MPE, J. W. Allen	1
-HAE, W. T. Moore	1
-MDE, G. B. Nicholas	1
-CFE, C. R. Massey	1
-PE-E, M. Wright	4
-VIE, C. J. Arnold	1
-RSE, A. R. Maykut	1
-HFE, R. J. Masucci	1
DRSMI-LP, Mr. Voigt	1
DRDMI-T, Dr. Kobler	1
-TK	1

DISTRIBUTION

	No. of Copies
DRDMI-TKK	1
-TKP	20
-TBD	3
-TI (Record Set)	1
(Reference Copy)	1